THE VETERINARY RECORD

A Weekly Journal for the Profession.

Edited by WILLIAM HUNTING, F.R.C.V.S.

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General Sir Frederick Fitzwygram.

The death of Sir Frederick is a great loss to the veterinary profession and we should be ungrateful indeed did we not give expression to the sorrow which all the older practitioners must feel. Sir Frederick Fitzwygram was a benefactor to our profession to an extent not generally known, and we regret that we must postpone till next week our acknowledgment of our indebtedness. Meanwhile we reproduce from *The Times* an obituary notice of his career in the wider spheres of politics and war.

Mr. LONG ON VETERINARY SCIENCE.

The extension of University education in Liverpool culminated on Tuesday last in the formal opening of the new veterinary school by the Rt. Hon. Walter Long, M.P. The report of the proceedings in *The Liverpool Courier* probably fails to do justice to Mr. Long, who spoke chiefly of the Liverpool University, and shortly of its veterinary school. He is reported to have said that the late Prof. Nocard "advocated the work they were now carrying out." We wonder who told Mr. Long this, and upon what is the assertion founded. Whenever there is a reference in public to the new veterinary school at Liverpool there is some remark inferring the dreadfully low condition of veterinary science, and suggesting that a miraculous progressive step has been made by the condescending patronage of the University. Whoever coached Mr. Long adopted the usual Liverpool tactics of self-advertising and mud-throwing. The President of the Local Government Board said, "Many of our young colonials who wanted to be trained in this particular branch of science had found it necessary to go to Universities abroad. There would be no necessity for that in future, and they could come to that University to be trained not only in veterinary science but to receive that wider education which would make them better veterinary officers than they could possibly be without it."

We should like to know the name of one colonial who went abroad because he could not get as good veterinary training in Britain. Is the Liverpool school really such an improvement upon the late New Veterinary College of Edinburgh?

Mr. Long was once President of the Board of Agriculture, and should know something of departmental veterinary officers. This is his *dictum*—"Without casting any discredit upon existing veterinary officers, or upon their valuable work, he could say there was room for enormous improvement in the class of men available for veterinary posts in connection with various departments." Mr. Long does not know what men are available; he only knows the men who accepted positions which were underpaid and which, compared with the lay appointments, were not worth having. Does Mr. Long think that the only *available* men in the veterinary profession are those who accept £300 a year without prospect of increase and no hope of promotion or pension, and whose services may be dispensed with by a month's notice?

Mr. Long has some original ideas on education The "great value" he attached to a veterinary school in connection with a University was—"because he believed no man could measure the enormous value to the student of conducting his studies alongside of others working in other branches of learning." This suggests quite new arrangements—the great advantage which would accrue to divinity students by working alongside biologists—the broadening influence of combined classes in agriculture and painting. In the technical schools a similar broadening would be obtained by the weaver and blacksmith working alongside each other. Those who have done a course of special work for a special calling need not be told that no time exists for any playing about with other subjects—even allied ones. The time "for broadening the mind" by association with others is not when a big task of special work is being mastered, nor should we think the place for such action is Liverpool.

SWINE-FEVER (MOVEMENT FROM IRELAND) ORDER, 1904.

On January 1st, 1905, this new Order comes into forces and prohibits the landing in Great Britain of swine from Ireland except in accordance with certain conditions.

The conditions in short are that they must leave Ireland with a licence granted by an inspector, be landed here after being indelibly marked, and taken straight to a place of slaughter.

If it can be shown that swine-fever has been imported to Britain from Ireland and that there is constant risk of this infection, the Order is necessary, and no possible objection can be taken to it. It must be confessed that the weekly returns of swine fever from Ireland do not suggest that much risk exists, but it is possible that notification of disease is not fully complied with.

"Careful observation makes a skilful practitioner but his skill dies with him. By recording his observations he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of Pathological Science."

THROMBOSIS OF THE ILIAC ARTERIES.

Recently you published a report made by a Continental veterinarian dealing with a case suffering from the above affection, and in which no satisfactory results were obtained by long rest. Within the last six months I have had a supposed case of this disease under observation, and without any treatment on my part the animal has apparently made a recovery.

I have been enabled to follow up the history of the patient through the courtesy of a brother practitioner, Mr. John Renfrew, who attended the animal prior to his coming into my client's possession. He reports as follows:—The chestnut horse after being in the possession of the Fire Brigade for about a year, was reported as having struck himself when going to a fire, nearly bringing himself down, and on his arrival at the seat of the fire it was noticed that he hung the off hind leg. On examination by Mr. Renfrew, it was found that the fetlock was filled as the result of the brushing, but he also had the three-cornered gait characteristic of a high up lameness. On subsequent occasions he was reported as having struck himself when at work, but on Mr. Renfrew being called in he was sound, although the leg might be swollen. He was kept off regular work until the swelling went down, various horse-shoers being given an opportunity of shoeing him, but the report was still the same. Ultimately Mr. Renfrew had him yoked and went with him to observe the alleged brushing, but from the symptoms he ultimately observed he came to the conclusion that he had a case of thrombosis of the iliac to deal with, affecting the off hind leg. His official record supplied by Mr. Renfrew to me is:-

Under treatment	Oct. 7, 1902, till	Oct. 31, 1902.
	Feb. 14, 1903,	Feb. 24, 1903.
	July 15, ,,	Oct. 12, ,,
	Oct. 31, ,,	Feb. 3, 1904.

when he was cast and sold.

I am informed by Mr. Renfrew that he treated him with iodide of potas, alkalies, aloes, bleeding, and external treatment, but nothing yielded the slightest benefit.

On June 2nd, 1904, I first saw the animal and diagnosed the case as one of thrombosis of the iliacs affecting both sides, but especially the near leg. It will be observed that I make him out to be affected of both legs in June, 1904, and that prior to that time both Mr. Renfrew and my client only mention the off hind leg as being affected.

I need not detail the symptoms he showed after being driven a few hundred yards, except to say that the loss of control was most marked in the near leg, his manner being somewhat like the gait of a horse suffering from an injury to his toe, he threw the leg forward and then drew it back some distance before he placed the foot on the ground. I felt satisfied that unless he was pulled up shortly after the symptoms showed themselves the horse would completely lose control of his limbs and fall. I told my client that in my opinion he was suffering from thrombosis of the iliacs, and that I could not advise treatment. He then informed me where the animal had formerly been, and on my return to town I telephoned Mr. Renfrew, who gave me the history I have given above, which I at the time gave to my client.

In the beginning of November of this year my father had the use of this animal for a few hours, and it was only towards the end of the journey that traces of his old affection were observed. These were easily kept in control by slowing him down, and he finished fairly fresh.

About a fortnight ago his owner gave me a drive behind this animal a distance of about three miles, and I failed to detect the slightest symptom of his former affection. My client further stated that he had driven him nine miles within the hour without any trace of illness.

It is on record that absolute rest for several weeks has, in some cases, given satisfactory results; in others the thrombus increased in size.

Up till this week I understood that this animal's only treatment had been a summer's idleness at the grass, but this week his owner informs me by letter that he has had the animal under Christian Science treatment since my visit in June.

As this is the first time I have heard of this treatment being used on behalf of a lower animal, I think it would be best that you publish the owner's history of the case in full.

WILLIAM ROBB.

I annex the report of the case as sent to me at my request by the owner:—

I bought the chestnut horse at Messrs. E. Dick Son's sale in the Cattle Market, Glasgow, on 16th March, 1904. I did not see the horse until he was at the auction box, and it was only from the great show he gave of himself that I was induced to bid for him, and ultimately he was knocked down to me at 34½ guineas.

I yoked him next morning in a light van, but had not gone one hundred yards before I discovered that I was sold. However, I gave him a light load and sent him two miles out to the country, and when my man returned he told me he had to stop him frequently to prevent him from falling. Only on one other occasion did I put him to work and with similar results. After this I gave him a turn nearly every night in a polo gig, and so long as he got leave to walk he was all right, but if put to a smart trot he would gradually draw up, and when stopped he could not put his off hind leg to the ground, and there was a considerable quivering of the flesh at the flank.

I got him examined by a personal friend of my own who said he thought it was a case of thrombosis of the iliac arteries, but as he had never seen a case of it before he advised me to get out Mr. Robb, which I did.

After your examination and report confirming my

friend's opinion, nothing was done for him in the way of medical treatment, but I may now inform you that he was treated in Christian Science and has made the recovory which you were good enough to admit quite lately when you had a drive with him.

ABSTRACTS FROM FOREIGN JOUNALS.

ON ILLNESSES CAUSED BY TRYPANOSOMATA. — By Prof. Dr. ROBERT KOCH.

(Continued from page 358.)

Koch believes that surra and tsetse are identical in their cause. Laveran on the contrary holds that animals rendered immune against tsetse have fallen ill of surra. That this is no proof of different parasites is shown by Koch's experiments on the Togo animals, for both were infected with the same parasites; the stallion died and the mare remained alive, but also died when infected with the stallion's parasites.

Interesting experiments were made by Koch at Dar-es-Salam. He inoculated healthy cattle with trypanosomata weakened (as mentioned previously) and then with highly virulent trypanosomata together with some control animals. All the control animals died, but the cattle inoculated with the weakened trypanosomata remained alive.

Veterinary Surgeon Schmidt repeated this experiment in one of the animals later, and it still remained immune. Six years afterwards Koch saw the same animal and was able to satisfy himself that it remained healthy. Immunity had thus lasted six years. Too weakened trypanosomata must not be used for this protective inoculation. Real immunity is given by this method, but it is not proved that these immunised and quite healthy animals have no parasites in their blood. Thus if one inoculates protectively on a large scale after this plan the tsetse illness would not be repressed but concentrated. Herds might be produced among which parasites are present, but showing no signs of illness and by this means the illness might be retained and kept alive. Power of resistance is only relative. From such immunised animals dogs can always be infected. It is well known to Africans that big game, such as antelopss and buffaloes harbour trypanosomata in their blood without showing visible signs of illness.

Another plan of campaign against this disease must therefore be sought. The stinging flies or else the parasites must be attacked. Koch says he knows of no means to exterminate the flies. As measures against the parasites all infected and all suspicious animals should be slaughtered. In this way the slaughter of big game aids materially. In Java and Mauritius slaughter measures have been taken. All the cattle in Mauritius died in two years through dilatory application of this measure. In Java the disease was quickly recognised and dealt with, and efficiently checked.

A radical plan of campaign against the trypanosomiasis of men is, unfortunately, impossible. Arsenic has not been unsuccessful. Recently a colouring stuff called trypanroth has given the best results.

Koch concluded his address by saying that all nations whose colonies are severely troubled with trypanosomata should band together, and by further investigations and experiments seek out an exact and scientific means of exterminating the disease. —Ex. *Berliner Thierärzt. Woch.*—Reported by Dr. JESSE. Trans. by G. M.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

The quarterly meeting was held at the Grand Hotel, Manchester, on December 1st, the President, W. Packman, Esq., in the chair, and the attendance included Messrs. Wolstenholme, Taylor, Faulkner, Lawson, Hopkin, S. Locke, McKinna, Bowes, Giblin, Sumner, Stent, Abson, Edwards, Brittlebank, Cliffe, Somers, Garnett, Woods, Stafford-Jackson, Mason, Scriven, and G. H. Locke. Visitor, H. L. Roberts, Board of Agriculture.

Apologies for absence were received from Messrs. Hughes, Kendall, Carter, Lloyd, and Eaton-Jones.

On the motion of Mr. Abson, seconded by Mr. Lawson, the minutes of the last meeting were taken as read.

Mr. W. S. WORTHINGTON, Wigan, was nominated for membership by Mr. Woods.

Mr. T. SHARE-JONES was nominated by Mr. S. Locke; and Mr. G. H. Locke nominated Mr. H. L. ROBERTS, of the Board of Agriculture, Mr. ARNOLD RICHARDSON, Mr. ADAMSON, and Mr. ALDRED.

A letter was received from Mr. T. O. Richardson, Lytham, tendering his resignation. It was resolved that this be accepted with regret.

Letters were also read from Prof. Delépine, of the Victoria University, and Dr. Annett, of the Liverpool Institute of Comparative Pathology, thanking the members of the Lancashire V.M.A. for the honour conferred by electing them to the position of Honorary Associates of their Society.

Mr. G. H. LOCKE then placed before the meeting copies of a circular letter from the Liverpool University Veterinary Medical Society drawing attention to the formal opening of the Liverpool University Veterinary School, on Dec. 13th, 1904; and to a banquet to be held in the evening of that day in honour of the event, The Right Hon. Walter Long, M.P., being expected to take the chair. The Committee elected to make the necessary arrangements consists of the Presidents and Secretaries of the Yorkshire, Lancashire, North Wales, and Liverpool University Veterinary Medical Societies. He (Mr. Locke) was asked to bring this event specially to their notice and to ask them to make this a notable epoch in the history of Veterinary education.

The PRESIDENT said he would like to endorse what the Secretary had said in reference to the opening of the Liverpool University Vet. Med. School. He trusted that each of the members of the Lancashire V.M.A. would use their best efforts to make the opening ceremony and the banquet a success. The other societies named were giving the matter support and he sincerely hoped they would not lag behind. Each Society was inviting prominent guests, such as the local Members of Parliament and other gentlemen specially interested in the subject of veterinary education. The question of bearing the expense of the invited guests was a subject he wished now to call their attention to.

There was a considerable amount of discussion on this latter question, some of the members considering that

a precedent would be thus formed which it might prove difficult to follow.

Ultimately Mr. S. Locke proposed, and Mr. Wolstenholme seconded, that the Lancashire V.M.A. co-operate with the other societies mentioned and that invitations be issued in the name of their Society by, and at the discretion of, the President Further, that the expenses of the invited guests be borne by the Society.

Mr. G. H. Locke now proposed that the hour appointed for holding the meeting be changed, and that instead of the meeting being held at 4 o'clock they should, in future have tea at 5 o'clock and the meeting at 6 o'clock. He observed that this latter arrangement was departed from two years ago for the convenience of country members, but, judging from the attendances, it had not been a success. Frequently the meetings had been broken into for tea and generally after tea only a few members returned. Furthermore, although they had started earlier the meetings had finished at the same time.

A letter from Mr. Hughes, Oswestry, was then read expressing the wish that if the hour of meeting be altered it should be made earlier for the convenience of country members whose numbers were now becoming largely increased.

A letter was also placed before the meeting from Mr. Kendall, Barrow-in-Furness protesting against the hour of meeting being made later, and also of the place of meeting being confined to Manchester. (This latter part of the subject was discussed afterwards.)

Mr. Munro, in seconding the proposal, said there had not been a good attendance since the old time had been departed from. He had met several members who had excused their absence owing to the meeting spoiling both afternoon and evening. He also thought that in consequence the President was not receiving the support which was due to him.

Mr. Somers, Leeds, wished to draw attention to the great inconvenience that would be caused to the Yorkshire members if the meeting was fixed for a later hour. It would necessitate them staying in Manchester all night, and he sincerely hoped that the matter would be thoroughly discussed before an alteration was made.

At this point a telegram was received from Mr. Carter, Burnley, in terms of agreement for a proposed change.

Mr. Garnett, Windermere, did not think that the decreased attendances could be altogether looked upon as an indication that the change of hour had had a detrimental effect. He supposed the decrease had been most noticeable during the last year and that was probably due to the formation of the Liverpool Veterinary Medical Society. Country members could not attend the two societies and they naturally chose that which they considered the best *pro tem.* No doubt some of their members were now attending the meetings of the Liverpool Society instead.

Mr. Sumner, Liverpool, said so far as the Liverpudlians were concerned an hour earlier or later would be more suitable, but preferably an hour earlier. At present they had practically to spend both afternoon and evening in Manchester. Would it not be advisable to consider the next proposition on the agenda along with this and come to some amicable arrangement. In his opinion the Liverpool Society had had no effect on the attendance as its meetings were of a more educational nature whilst the Lancashire Society's meetings partook more of a sociable character.

Mr. S. Locke, Manchester, pointed out that on several occasions when a paper was being read they had to stop in the middle of it to have tea and thus the effect of the paper had, to some extent, been spoiled.

Mr. Lawson said that as a member for thirty years his experience was that the hour of 6 o'clock for the meeting had been most successful. There were years when their Society might suffer, but taken altogether he thought that many splendid meetings had been held in the evening. He was exceedingly sorry for the members who lived in the country, but still if they only attended once in six months they would be repaid.

The President then put the motion to the meeting and in its favour sixteen votes were given, whilst three only were given to the contrary. The motion was thereupon declared carried. Several members abstained from voting.

The next business was a proposal "That the question of arranging other centres for the meetings be considered." Mr. Kendall, in whose name this proposal stood, was unfortunately unable to attend owing to indisposition, and Mr. Faulkner asked to be allowed to take up the subject rather than let it go by default owing to the absence of Mr. Kendall. He (Mr. Faulkner) did not wish it to be understood that he had any motive in bringing the matter forward except that as they had a good muster of members the subject should not be shelved merely because of the absence of the original proposer.

Mr. Sumner seconded the proposal.

Mr. Wolstenhome wished to know what other centres were available.

Mr. G. H. Locke replied that Mr. Kendall had suggested Preston.

Mr. S. Locke said the experiment had been tried before and there was practically no attendance.

Mr. Wolstenholme stated that there were only two good centres within a radius of forty miles, and these two were Liverpool and Manchester. Liverpool had a centre of its own and Leeds also had a centre. He thought other places such as Blackburn, Preston, Wigan, etc., would not be so convenient for the majority of the members.

On the proposal being put to the meeting only two votes were given in its favour, and it was therfore not approved.

Mr. G. H. Locke asked whether it was necessary to give notice of motion for the election of a Council or Standing Committee to deal with urgent matters such as had arisen in connection with the Liverpool Association's opening ceremony.

Mr. Taylor, on consulting the rules of the Association, gave, as his opinion, that notice of motion ought to be given.

Mr. G. H. Locke then gave notice of motion as above referred to.

Mr. Wolstenholme, in speaking of the financial position of the Association desired to tender an apology to the members if they had been mulcted in excess postage on letters received from him on behalf of the Society. He had been in communication with the Post Office Authorities on the subject of postage for circulars and he now thought there would be no further deficiences to be made up. He then proceeded to give figures from a rough balance he had made up to that, the last, meeting of the year. When the various expenses, etc., of the year had been met the Society would, he thought, be practically in the same position financially as they were a year ago. The correct balance sheet will be placed before the next meeting.

Election of Officers.

Mr. Giblin said it gave him great pleasure to propose that Mr. Packman be re-elected as President of their Association.

Mr. Munro cordially seconded this, and after Messrs. Hopkin and Lawson had spoken in support of the proposition it was put to the meeting by Mr. Sumner, and carried without dissent.

The President, in reply, begged to thank them very much for the renewal of their confidence. It had not

been his intention on entering the room to accept the position again even though it were offered. Owing to the unanimous vote which had been given he now felt that he could do no other than accept. He thanked them very sincerely for the honour again conferred upon him.

Vice-Presidents.—The following gentlemen were elected:—Mr. Munro, Altrincham, proposed by Mr. Packman, and seconded by Mr. Faulkner. Mr. Stafford Jackson, Liverpool, proposed by Mr. Taylor, and seconded by Mr. Somers. Mr. Hughes, Oswestry, *ex-officio*

Treasurer.— Mr. Faulkner proposed that Mr. Wolstenholme be re-elected, and said it would be a mistake not to ask him again to take that position. Mr. Lawson seconded, and it was approved.

Hon. Sec.—On the proposal of Mr. Taylor, seconded by Mr. Hopkin and supported by Mr. Wolstenholme, Mr. G. H. Locke was again appointed Hon. Sec., warm tribute being paid to the manner in which he had discharged the onerous duties attaching to that office.

Auditors.—Messrs. Faulkner and Jones continue; Messrs. Packman and Taylor being proposer and seconder respectively.

The arrangement connected with an annual dinner were then brought forward and it was decided, as usual, to elect a Sub-Committee consisting of the officers of the Association, with power to add to their number, to deal with the matter.

At this stage of the proceedings tea was partaken of, after which some very interesting specimens were placed before the meeting and their history given by the exhibitors.

Pathological Specimens.

The first described was the heart of a "two-year-old" colt brought by the President. The mother had died when the colt was a week old and consequently it had to be reared by hand. It did not progress favourably, and when about 18 months old he (Mr. Packman) was consulted in regard to it. He found it to be suffering from extensive heart trouble, and advised its being slaughtered. The owner did not at first care to lose the colt, having brought it up on milk, but ultimately decided on that course. On making a post-mortem examination he found that the tricuspid valve was covered with large growths completely closing the orifice. Each growth when fresh was the size of a duck's egg. The whole of the chordiæ tendinæ were involved. He examined all the other organs, but found no other disease or tubercular deposit. The colt was well nourished.

Expression was given by many of the members present that this was the best specimen of its kind they had seen. Mr. Packman has presented the specimen to the Liverpool University.

Mr. Wolstenholme exhibited the stump of the penis of a horse which had been amputated two months before slaughter. The horse was perfectly under chloroform when he performed the operation, which was one which gave him complete satisfaction. At the end of two months, however, the orifice made up and the horse practically could not urinate and was destroyed. The specimen showed closure of the urinary outlet by contraction and cicatrisation.

Mr. Wolstenholme also exhibited portions of the cæcum and colon of a horse which had been extensively affected with follicular ulceration. The horse had been wasting for months, but there had been no diarrhœa, and there were no special symptoms to assist in diagnosing the illness. There was, however, a temperature of 101·5°. He instructed the owner to give the horse gentle exercise, feed it well, and to have it weighed. At the end of a fortnight he (Mr. Wolstenholme) ascertained that the horse had fed well, that the fæces were normal, the temperature was still 101·5° and that it had lost twenty-eight pounds. It was thereupon slaughtered and a post-mortem examination revealed that the whole of the cæcum was very much thickened and the entire surface was covered with innumerable ulcers about the size of a threepenny piece, the majority of which had a necrosed area in the centre. This had extended some little way down the first portion of the colon. The curious point about this illness was that such extensive trouble should go on in the bowel and yet there should not be any diarrhœa.

The remainder of the evening was spent sociably in discussing similar cases, most of the members present giving details of cases which had come under their notice.

A cordial vote of thanks was afterwards passed for the very interesting specimens placed before the meeting.

G. H. Locke, *Hon. Sec.*

THE VETERINARY MEDICAL ASSOCIATION OF IRELAND.

A general meeting of the Association was held at the Gresham Hotel, Dublin, on Wednesday, November 30, 1904, at 7.30 p.m. The following members were present: The President, Charles Allen, Dublin, in the chair; Messrs. J. D. Whitty and H. Hannan, Vety. Branch, D.A.T.I., Dublin; Prof. J. J. O'Connor, R.V. Coll., W. H. Wilkinson, W. Russell, J. K. Thompson, R. B. Freeman, J. J. Kelly, and L. M. Magee, Dublin; R. Griffin, Drogheda; W. H. Harvey, Tullamore; S. R. Tufts, Castlewellan; R. J. Sargent, Mullingar; Prof. G. H. Wooldridge and Prof. J. F. Craig, Royal Vety. College; A. Baker, Bansha, Co. Tipperary; W. Cargill Patrick, Ballinasloe; J. W. Nolans, Birr; P. J. Howard, Ennis; L. P. Power, Cashel; E. Finucane, Thurles; G. V. McNaboe, Mullingar; G. B. Miller, W. Chambers, and J. A. Jordan, Vety. Branch, D.A.T.I.; A. Dobbyn, Waterford; M. Hedley. Vety. Branch D.A.T.I.; Prof. A. E. Mettam, Principal, R.V. Coll.; Capt. R. H. Holmes, A.V.D., Kildare; Finlay Kerr, Vety. Branch, D.A.T.I.; A. C. Duncan, R.V. Coll.; F. W. Taylor, New Ross; W. H. Bradley, Dublin; L. W. Lloyd, Portadown; J. Holland, Athy; and J. McKenny, Hon. Secretary. The following visitors were present: Messrs. J. J. Wade, Maynooth; J. L. Orr, Strabane: and E. J. Conroy, Maryborough.

The following gentlemen wrote expressing their inability to be present: Messrs. J. Preston, G. Muir, J. H. H. Peard, E. Wallis Hoare, J. Bell, A. A. Donnely, G. Phelan, T. E. Loughran, P. W. Creagh, E. B. McLay, J. Moir, R. Hayes, W. E. Elkins, J. H. Norris, J. O'Brien, S. Adamson, S. W. Hadfield, J. R. Lewis, G. Newsom, W. A. Young, V. de V. Woodley, C. J. Clifford, T. McCauley, J. A. Thompson, W. Dagg, J. J. Vahey, E. C. Winter, M. Murphy, F. C. Mason, P. D. Reavy, Col. J. Reilly, A.V.D.; J. F. O'Donnell, A. F. Walshe, T. L. Simcocks, S. R. Thompson, J. D. Baker, D. M. Barry, W. P. Cushnahan.

Elections and Nominations.

The following gentlemen were balloted for, and duly elected members of the Association: Major Appleton, A.V.D., Dublin; Messrs. R. J. Sargent, Mullingar; L. W. Lloyd, Portadown; A. C. Duncan, Royal Vet. Coll., Dublin; Allan Baker, Bansha, Co. Tipperary; J. F. Hayes, Nenagh; G. V. McNaboe, Mullingar; and Capt. W. A. Pallin, A.V.D., The Curragh.

Messrs. J. J. Wade, Maynooth, and W. Dagg, Dingle, were nominated for election as members of the Association.

Report of Council.

Mr. President and Gentlemen,—At the last meeting

of your Council, your Secretary read a communication he had received from a member of our Association, in which he complained that a chemist residing in his town was issuing advertisement handbills with the word "Veterinary" tacked on to the names of certain medicines. The Secretary forwarded the handbill complained of to the Royal College of Veterinary Surgeons, and was ultimately informed that the question was dealt with by the Registration Committee, and that said body did not consider the case was one in which it could interfere.

A letter was also received by your Secretary from another member of the Association enclosing an advertisement circular issued by a firm of chemists in which was stated that they gave "veterinary advice free." Your Secretary immediately wrote to a member of the profession residing in the town in which the firm of chemists reside who committed the offence complained of, asking if he had made any arrangement with the firm to give veterinary advice, or if to his knowledge any qualified veterinary surgeon was attached to their establishment who would be able to render the services referred to. The veterinarian replied that he had no connection with the said firm, and up to the time of receiving our communication was not aware that the firm were acting in the manner complained of, also that he was the only qualified veterinary surgeon in the said town. Your Secretary thereupon wrote to the Royal College of Veterinary Surgeons placing all the facts before its Secretary and asking him to submit same to the Council and to the Solicitor of the College, with a view to preventing the firm from acting in this fashion, and punishing them for what they have done. Your Secretary has received notification that the question will be brought forward at the meeting of the Registration Committee in December.

With reference to the Professors of the Camden Town Veterinary College practising privately, our President has kindly consented to lay the matter before the next meeting of Council of the R.C.V.S., and to report the result.

Your Council have under consideration the question of obtaining from railway companies a reduction of fares to the members of this Association who reside in the country who wish to come to the general meetings held quarterly, and the following resolution was passed:—"That Messrs. Allen, Hedley, and McKenny be deputed to act as representatives of the V.M.A.I. to deal with the railway companies *re* the reduction of railway fares to members attending the quarterly general meetings."

It was decided that the proposed scheme for the creation of Veterinary Dispensary Officers in Ireland be considered at the November general meeting.

A communication was read by the Secretary at the last Council meeting from a firm of wholesale druggists in which the firm propose to confine the sale of serums, etc., to the veterinary profession in Ireland, and that the members of the V.M.A.I. will receive wholesale terms. It was decided that the consideration of this matter be postponed until the next Council meeting.

With reference to specialists in the veterinary profession, Messrs. Allen and Mettam have agreed to draw up a scheme for the consideration of the Council.

Your Council consider it advisable that inquiries be instituted as to the fact that the veterinary profession remains unrepresented in the Honour List, and that steps be taken to have the omission remedied.

VETERINARY DISPENSARY OFFICERS.

The SECRETARY opened the discussion on the suggested scheme for the appointment of Veterinary Dispensary Officers in Ireland.

The following joined in the discussion: Messrs. Griffin, Freeman, Holland, Howard, Dobbyn, Magee, Patrick, Power, Wade, Sargent, Finucane, Hedley, Taylor, Orr, and Kelly.

The following resolution was passed:—"That a Committee be formed to consider Mr. McKenny's scheme, to report upon it, or to formulate a scheme which in its opinion will be workable."

A committee was proposed, but the names are not given as all were not present at the meeting, and therefore have not yet accepted the office. It was resolved that the minutes of the meeting relative to the suggested scheme should not, at present, be published, as the matter has been placed in the hands of a committee to consider and report upon.

Mr. FREEMAN proposed, and Mr. Holland seconded, a vote of thanks to Mr. McKenny for the trouble he had taken in connection with the scheme.

Mr. PATRICK, who was appointed secretary of the Conjoint Committee of the two Irish Veterinary Associations to consider the question of Veterinary Inspectors under the Diseases of Animals Acts, read the following report:

"At a meeting of the Conjoint Committee appointed by the two Irish Veterinary Associations for consideration of matters in connection with Veterinary Inspectors under the C.D.A. Act, held at 116 Stephens Green W., on Friday, 11th Nov., 1904, the following being present: Messrs. J. A. Thompson, Lurgan; P. J. Howard, Ennis; Wm. Cargill Patrick, Ballinasloe. It was proposed by Mr. Howard, and seconded by Mr. Patrick, that Mr. Thompson occupy the chair. It was proposed by Mr. Thompson, and seconded by Mr. Howard, that Mr. Patrick be appointed secretary.

It was resolved to forward a letter to the Department of Agriculture drawing attention to the fact that hitherto Inspectors appointed under C.D.A. Act have not had their duties sufficiently well defined, and that it is now suggested to impose additional duties, to which there is evidently no limit, without awarding adequate remuneration; we therefore consider a genuine grievance exists, and desire that said Inspectors have their duties more clearly set forth for the future, and that provision be made for duly compensating in all cases where it has been found necessary to alter or extend the already existing conditions.

It was unanimously resolved to forward the following resolution to the proper quarter at an early date:—'Whereas the duties of veterinary inspectors under the County and Urban Councils of Ireland vary very much in extent and variety, and are undefined, said duties are every day on the increase, and likely to be still more increased in the future, we respectfully suggest that said duties be defined specifically, and that all extra work imposed on the Inspectors be paid for by proper and adequate remuneration. We suggest also that some uniformity be instituted both in the way of salary and emoluments, as well as specific duties.'

It was resolved that the matter under discussion be considered at the next meeting of the V.M.A.I. to be held on the 30th inst., as the views of the members of the profession could thus be obtained at an early date."

The above resolutions were considered by the members of the V.M.A.I., and approved.

Mr. HOWARD proposed, and Mr. McKenny seconded a vote of thanks to the President, and the meeting then terminated.

The Chartley Wild White Cattle.

The celebrated Chartley herd of wild white cattle was offered for sale at the Mart on Thursday last by Messrs. Walton & Lee, but a sale was not effected publicly. Subsequently, however, a gathering of persons entered into negotiations with the auctioneer, but the result was not made known.

THE NATIONAL VETERINARY BENEVOLENT AND MUTUAL DEFENCE SOCIETY.

The annual meeting of the above Association was held on Thursday, December 1st., 1904, at the Grand Hotel, Aytown Street, Manchester, W. A. Taylor, Esq., president, in the chair. Present: Prof. W. O. Williams, Messrs. E. Faulkner, F. Somers, A. Lawson, J. E. Scriven, T. Hopkin, J. B. Wolstenholme, W. Woods, A. W. Mason, E. S. Gubbin, H. L. Roberts, F. W. Garnett, G. Harry Locke, W. Packman, H. G. Bowes, and the Secretary.

The minutes of the last annual meeting were taken as read, the same having been printed and circulated, passed and confirmed.

Letters of apology for non-attendance were read from Messrs. R. Hughes, A. L. Butters, H. J. Dawes, A. I. MacCallum, R. C. Trigger, W. Hunting, W. Carless, F. W. Wragg, J. S. Carter, and J. Abson.

The PRESIDENT apologised for not having written an address, he did not think it was necessary, as we receive reports of the proceedings of the Society from the Secretary and Treasurer, our aim being deeds not words. He was pleased to see the President of the Central V.M.S. in his address alluded in kind words to this Society. We send copies of reports and balance sheets to every Society, but have not the response he would wish as to the introduction of new members, but we have many applications when in trouble and in need. In regard to the benevolent portion of our work, the minute book will show the good work done. We changed our rules some years ago to enable us to assist all members of the Royal College of Veterinary Surgeons and their relatives, and we find that nearly all applicants are from non-members. He was pleased to say that we are working in harmony with the younger benevolent society, the Victoria, long may this continue in the good work of helping the needy.

The SECRETARY, in presenting his annual report, said the Council had had a very busy year in conducting the business of the Society; five meetings had been held, besides which the executive officers had many conferences in discharging the duties allocated to them by the Council, in giving immediate relief where needed, and considering and deciding if defence cases came within the purview of the Society's objects. Several important defence cases had been materially assisted during the past year, two charges were brought by officers of the R.S.P.C.A. against veterinary surgeons (members) for alleged cruelty to animals, these were strongly defended with the result that one was withdrawn, paying a certain amount of costs, and the other was dismissed. Several other cases brought before the Society were very happily not proceeded with. What a boon and relief must the combined strength of this Society be to any of its members when threatened by law. The careful and considerate investigation of the case by the whole Council, the advice given, and when necessary able defence provided, and, gentlemen, all this for the sum of 10s. 6d. per annum, and the surplus, as you know, goes direct to the benevolent fund. Mr. Faulkner, as treasurer, will inform you what has been done in that respect during the year. Let me once more appeal to all members of the R.C.V.S. to join this most useful Society. During the year we have enrolled 17 new members, and have lost two by resignation, and one by death. We have on our list 265 members.

The TREASURER, in presenting his report, regretted he could not present a complete balance sheet, inasmuch as the accounts went on to the end of the year, when they would be audited and presented in full to the members. He would like a change made as to the date of annual meeting, so that the full accounts could be presented at that time for discussion. During the year we had expended some £200 in defence cases, £100 in benevolence. We have invested £4,200, and some £800 in hand. He was sorry to report a large number of arrears, and three members four years. He proposed that according to our usual custom these gentlemen be written to intimating that if the amount due be not paid at the end of the year, their names be crossed out of the list of members. This was seconded and carried.

The following were elected officers for the ensuing year, 1905:

President.—W. A. Taylor, F.R.C.V.S., Manchester.
Vice-president.—W. Woods, F.R.C.V.S., Wigan.
Treasurer.—E. Faulkner, M.R.C.V.S., Manchester.
Secretary.—Sam Locke, M.R.C.V.S., Manchester.
Members of Council.—J. Abson, F.R.C.V.S., Sheffield; A. L. Butters, M.R.C.V.S., London; J. S. Carter, F.R.C.V.S., Bradford; T. Hopkin, F.R.C.V.S., Manchester; A. Lawson, M.R.C.V.S., Manchester; A. W. Mason, F.R.C.V.S., Leeds; J. E. Scriven, M.R.C.V.S. Tadcaster; W. Shipley, F.R.C.V.S., Great Yarmouth; F. W. Somers, M.R.C.V.S., Leeds; R. C. Trigger, F.R.C.V.S.. Newcastle-under-Lyne; J. B. Wolstenholme, F.R.C.V.S., Manchester; Prof. W. O. Williams, F.R.C.V.S., Liverpool.

It was proposed, seconded, and carried that Messrs. Butcher, Litton, and Pownall, and Mr. J. B. Wolstenholme, be appointed auditors for the ensuing year.

Several members having referred to the inconvenience of holding the annual meeting immediately before the end of the financial year, it was proposed, seconded, and carried, that the annual meeting be held early in the year.

A vote of thanks to the officers for their services during the past year, and to the President for presiding, closed the proceedings.

SAM. LOCKE, *Hon. Sec.*

SAPROPHYTIC AND PARASITIC BACTERIA.

THE HORACE DOBELL LECTURE, delivered before the Royal College of Physicians of London on November 22nd, 1904, by E. KLEIN, M.D., F.R.S., Lecturer on Advanced Bacteriology at St. Bartholomew's Hospital.

[ABSTRACT.]

The subject I have to deal with will best be considered under the following three heads: (1) Morphologicol; (2) Chemical; (3) Physiological.

1. MORPHOLOGICAL.

What are bacteria? Since v. Naegeli's—and particularly F. Cohn's—fundamental researches into the morphology and development of bacteria, these micro-organisms are considered as a special order amongst fungi, being spherical, oval, or cylindrical cells without a nucleus, enclosed in a sheath, devoid of chlorophyll, and multiplying by first enlarging and then dividing by simple fission, hence their name "schizomycetes." Amongst the bacterial species some have been shown in which the individual cells are capable of concluding their life cycle by forming in their interior spores of a permanent character, which spores, after the total disappearance of the remainder of the cell, become free and are capable of preserving for long periods their germinating power, and consequently of starting new generations, notwithstanding various inimical influences of locality, temperature, etc., surrounding them.

A considerable number of observations have, however, been recorded since Cohn's time. In the first place, the question has to be asked whether and to what extent bacteria are comparable to vegetable cells? That some bacteria, like the constituent elements of the higher fungi and of higher plants, are possessed of a cellulose

membrane, is a fact which admits of no doubt ; a simple micro-chemical (iodine) test proves this. Another point of similarity to the cells of the higher fungi is this—namely, that, as in the constituent elements (both young and old) of the higher fungi, vacuoles or drops of fluid appear in the protoplasm also of some species of bacteria in certain phases of their growth, and particularly when growing in media much diluted by water—that is, in which the nutritious elements are scanty and reduced in amount. In these respects a resemblance is noticeable between the cells forming the threads of mycelium of the higher fungi (saccharomyces or oidium, aspergillus, penicillium, mucor) and the bacterial cells. A further analogy is offered by the cells constituting the threads of streptothricheae, including actinomyces, which as to their morphology and mode of growth may justly be considered as intermediary links between the mycelial threads of the hyphomycetes and those bacteria which are capable of forming threads.

The next point deserving attention is the question of the nucleus. When living bacteria are rapidly dried in very thin films and stained, their protoplasm shows differentiation of at least two substances, one of which, generally situated centrally or nearly so, stains deeper or in a different tint than the peripheral portion. All that can be maintained, however, is that under certain conditions of staining different parts of the cell protoplasm possess different chemical affinities to the dye—affinities which in some instances seem to indicate the presence of "granules" differing from ordinary protoplasm (metachromatism).

We must conclude, however, that at present no data are at hand which would justify our ascribing to bacteria a nucleus, that is, that definitely shaped and definitely placed well-defined central substance which in the cells of higher plants and of animals plays the part of division centre. If further proof were needed it is found in studying bacteria during division. Here no appearances can be observed which would denote a division of the alleged nucleus. In this respect, then, the bacterial cell compares with and belongs to the same group as the cell constituting the hyphomycetes and streptothricheae, and is not comparable with the cells of higher plants.

The formation in certain species of bacilli of spores, conspicuous by their shape, chemical reaction, and position within the cell protoplasm, and by their high resistance to inimical influences, is a subject which, since Cohn's researches, has received a great deal of attention. Of several points in relation to spores which as yet have not received sufficient attention two stand out prominently: (1) What is the exact and intimate mode of their formation ? and (2) what are the conditions necessary for their formation ?

When studying carefully the formation of spores in some species, the following observations can readily be verified: while certain individual bacilli of a given species enlarge, becoming thicker and more transparent, in which the spore formation is completed in the recognised manner, there are other bacilli of the same species and sometimes even in the same preparation in which the initial glistening globule, which in others continues to grow till it reaches the size of the adult spore, remains small and does not grow up into the oval spore. These globules do not stain in the exact manner of spores, and in some bacilli are double, nor can they be confounded with vacuoles, because they are solid bodies reacting in the manner of fat globules or of some substance similar to fat, and behaving more or less like acid-fast substance such as furnish the tubercle bacilli with their power to withstand nitric acid. B. anthracis, which has been carried through many generations in the laboratory in artificial culture and in which formation of adult full-sized spores has become sparse, shows the above appearances very strikingly. By continued transference in artificial media the formation in many sporogenous species, particularly of the pathogenic kind, of adult spores becomes more and more inhibited, so that after many generations the spore formation altogether ceases that the microbe may become asporogenous.

In other species the enlargement and greater transparency of the cell protoplasm is observed ; but instead of a spore being formed in the enlargement a central condensation of the substance takes place in it, which stains somewhat differently and more deeply than the rest of the latter. It may even assume the fatty, glistening aspect ; but here the process ceases—no further growth and enlargement of this body occurs ; it does not stain after the exact manner of spores, being less liable to retain the first stain and being less acid-fast ; moreover, it is devoid of the power to germinate and to give origin to a new bacillus.

These observations justify us in concluding that we are dealing here with an "abortive spore formation"—that is, an arrest of the process. It falls short of the development of the essential part of the spore in so far as of the constituents of a real spore only the fatty matter has been formed, but not the true living substance capable of subsequent germination, which process is, after all, the essence of the nature of a spore. It is this power of germination in the true sense used by botanists which must be considered as the determining factor in what is and what is not a true spore ; and we shall see that an organism merely capable of preserving its vitality under adverse circumstances does not justify us in considering it as a spore.

It had been at first assumed that spore formation in the sporogenous bacilli depends in a given culture on the consumption of the nutritive substances below a certain point—that is to say, when, owing to the continued growth and multiplication of the bacilli in a given amount of nutritive material, this latter is becoming exhausted, the bacilli close their life-cycle and form their permanent seeds or spores. But this explanation is not borne out by observation, for spore formation not only happens in the central part of the colony, which one might perhaps suspect of being the part where exhaustion of nutritive material is making itself first felt, but it can be observed quite unmistakably at the margin of a colony. At present we are driven to the conclusion that bacilli, having reached maturity, conclude their cycle by spore formation, and in this respect differ essentially from non-sporogenous bacteria in which the whole life is of a more uniform nature, consisting in growth and simple division, lasting as long as the conditions of growth are favourable for it.

I would claim for those species of bacilli which are capable of forming spores a separate position amongst the bacteria, as separate as, amongst the mycelial fungi, the sporogenous species, like mucor, aspergillus, or penicillium, are from the tribe of oidium.

Whether in the sporogenous bacilli something of an interaction of sexual elements, as sometimes occurs amongst the mucorinæ, or of elements, of a different nature is required for the establishing and creating the spore, is a subject well worthy of further attention. The fact already quoted of deficient progress, or rather want of further progress, observed in the "abortive spore formation" is not incompatible with such a view.

Amongst the species of bacteria in which spore formation has not been observed, there is one group which seems to stand out prominently, because, owing to its high resistance to inimical influences—drying and heat—it is credited with the possession of spores—namely, the group of acid-fast bacilli, notably the bacillus tuberculosis. The most careful microscopic examination of the tubercle bacilli of sputum or of other tuberculous deposits or of artificial cultures fails to show spores such as occur in the real sporogenous bacilli. The unstained

spaces between the stained granules—at first thought to be unstained spores—have long been recognised as spaces free of chromatic substance.

But the high resistance of tubercle bacilli being a fact, it is feasible to explain it by ascribing it to the waxy substance, that is, the part of the bacilli which furnishes it with the acid-fast character. As a matter of fact the fatty (waxy) envelope of the real spore (of sporogenous microbes) is, according to many accounts, the cause of the high resistance of the spores, and further, spores of some bacillary species treated in the same way for acid-fast condition as the tubercle bacilli, show the same or similar staining characters as the latter, but it will hardly be said that all acid-fast parts of the tubercle bacillus—and as a matter of fact the whole of it is acid-fast—is spore.

During the last ten years or so, a good deal of attention has been directed by morphologists to the appearance of branched forms amongst some species of bacilli, and to the clubbed ends of the branches. It requires no stretch of imagination to conclude that these species of bacilli, which under ordinary conditions of growth are made up of non-branched, rod-shaped or cylindrical bacilli, under other conditions are capable of reverting to and of assuming forms of an atavistic type, a reversion not unknown among plants and animals. If this be the correct interpretation, it would lead us to suppose that these bacillary species have at one time of their evolution been, not what we now consider them to be, namely, typical species of bacilli, but something akin to the saccharomyces form of blastomycetes—that is to say, they were originally derived from a parent stem of the nature of an oidium or saccharomyces.

There are, in support of this view, two further points. Taking, for instance, certain species of micrococci, it is not at all difficult to meet in perfectly active and recent cultures individuals which are four and more times as big as the typical cells of the species; they look like single giant cocci. Then we find such giant cocci in which a division into two or four big cocci is more or less indicated, and lastly giants in which the division into two or four is complete. We have, then, in these giants the growth of a coccus to great size without division, in which division has been greatly delayed while enlargement continues, whereby the coccus reaches the size of a torula or blastomyces. In cultures of some strains of streptococcus one meets in older cultures on solid media with appearances which markedly resemble not fission forms such as are generally typical for cocci, but forms which suggest gemmation—namely, a typical coccus of the normal size from which projects a very small coccus. Another point leading to a similar interpretation is observed on some strains of B. anthracis, in which forms resemble strikingly the forms seen in saccharomyces or oidium albicans, with torula forms, spindle forms, and threads or mycelial forms.

From the facts I think we are justified in drawing the conclusion that the same phylogenetic relation exists between cocci and bacilli as between the true torulæ and saccharomyces or oidium; and, further, that the bacilli themselves are the counterpart of those blastomyces which belong to the group of saccharomyces or oidium; this would lead us to the further conclusion that, just as saccharomyces or oidium is phylogenetically considered an offshoot of the primary and true torula, so, also, the bacteria—both cocci and bacilli—are, as shown by their conditional relapse into atavistic forms, phylogenetic offshoots of blastomyces. In this view be the correct interpretation of the phenomena enumerated, we should have to start with the true torula as being situated at the parent trunk, bacteria commencing with cocci, as representing one kind of branch, oidium another, and sporogenous hyphomycetes as the farther phylogenetic diversion of the latter. Amongst the bacteria, the typical cocci, like staphylococci, would be the primary forms, next would come streptococci and cocco-bacilli, and last the true bacilli. And amongst the bacilli, those species which are capable of forming true spores would represent a phylogenetic advance on other bacterial species, just as hyphomycetes, which are capable of forming spores like penicillium, mucor, or aspergillus, are phylogenetically a higher branch than saccharomyces or oidium and streptothrichæ.

2. Chemical.

I mentioned at the commencement that bacteria in morphological respects are comparable to plants. But many years ago it was pointed out by the late Sir Edward Frankland that bacteria, unlike plants, and more like animal cells, break down higher and complex organic bodies into simpler compounds, and there can be no question that this universally holds good for bacteria—namely, that either by oxidation or reduction they are engaged during their life in dissociating more complex into less complex matter. But it has nevertheless to be remembered that some, at any rate, are capable of building up higher compounds (their own protoplasm) from simpler combinations.

It is outside the scope of the subject of this lecture to discuss the manifold chemical processes with which many species of bacteria are connected, and I must confine myself to a few points bearing directly on the evolution and differentiation of bacteria.

Intracellular Phlogogenic Poison.

Certain species of bacteria—apart from the question of capability or non-capability to set up specific disease in the human and animal system—possess in their cell bodies a phlogogenic poison, which, judged by the result of peritoneal injection into the guinea-pig, causes acute inflammation (peritonitis) with fatal result; this result being uniform for all active species must be due to a poison common to them all; it is a poison lodged in the cell substance itself, and in most instances is readily obtained by simple emulsion. This result is produced equally with the living as with the previously killed emulsion. In this action there is nothing of the nature of a specific disease, and as a matter of fact it is observed in some species of bacteria which have no action of an infectious nature on the animal body. Taking, for instance, two microbic species like B. typhosus and the common B. coli, the former being the cause of a specific disease, the latter not, it will be found that both possess the same kind of intracellular phlogogenic poison, causing the same kind of acute fatal peritonitis.

Moreover, there are some species which, though capable of causing highly virulent infectious disease, are not possessed of the phlogogenic poison. To this category belong B. anthracis, B. diphtheriæ, and the bacillus of swine erysipelas.

It has been found in recent years that while certain pathogenic bacteria readily elaborate specific toxins in certain culture media, others do not do so. Thus, whilst the presence of the specific toxin of anthrax when grown in certain media (blood serum, fibrin), of tetanus in formate and glucose broth, of diphtheria in ordinary broth, is demonstrable in the medium, it is not present in the broth cultures of B. typhosus or vibrio choleræ. This holds good in a conspicuous degree with the tubercle bacillus, which, as Koch has shown by his different forms of tuberculinum, have stored in their substance several kinds of specific toxins. It is suggested that in the first class of cases the toxin is ectotoxin, that is, outside the bacterial cell—for example, tetanus, diphtheria—whereas in the second the specific toxin is inside, that is, stored up within the bacterial cell: endotoxin—for example, B. typhosus, vibrio choleræ, bacillus tuberculosis. If this view be the correct one, we should have three different groups of bacteria as regards their behaviour in artificial culture media, namely: (1) such as neither within nor without the bacterial cell produce

any specific toxin, that is to say, toxin for the animal body—such are the non-pathogenic, non-specific bacteria; and (2) bacteria which possess the power to produce (secrete?) a specific toxin in the culture media (ectotoxin) or to include (store up) in their substance the specific toxin (endotoxin)—such are the true or specifically pathogenic bacteria, that is, those connected with specific diseases; (3) bacteria, some connected with infectious disease, others not, which possess an intracellular poison of a general phlogogenic character, that is, a poison which is not specific, but which is capable of causing on intraperitoneal injection in all instances the same acute peritonitis.

Putrid Decomposition.

There is one group of bacteria which, from a certain point of view, requires separate treatment; these are the species which cause putrefaction in the narrower sense—namely, decomposition of albumen with evolution of ammonia and sulphuretted hydrogen, and with the simultaneous production of those poisonous alkaloidal bodies known as ptomaines. They are capable of producing poisonous alkaloids, which, injected into animals—rodent as also carnivorous—in sufficient doses directly into the vascular system or subcutaneously cause acute severe gastro-enteritis, rise of temperature, vomiting, diarrhœa, with hæmorrhage into the duodenum and rectum, suppression of urine, collapse, and death. These are the poisonous actions which were known already to Bergmann, Panum, and Billroth as "putrid intoxications." Some of these "putrefactive bacteria" do not multiply in the normal tissues and are harmless when injected by themselves, although others, like some varieties of proteus vulgaris, are capable of growing and multiplying in the subcutaneous tissue of rodents—and probably also in wounds of human beings—of causing the production of ptomaines *in situ* and by absorption of these a fatal intoxication (fatal sapræmia).—*The British Medical Journal.*

(*To be continued.*)

The Minority Report of Committee formed to carry out Investigations with the Vaccine of Dr. Phisalix for the Prevention of Distemper in Dogs. London, 1903-4.

This Committee was formed on April 22nd, 1903, with the intention of carrying out investigations in order to test the value of the Phisalix Distemper Vaccine. The names of the members of Committee were as follows: Messrs. H. M. Singleton (Chairman), J. M'Fadyean, Hartley, E. L. Stroud, A. J. Sewell, H. J. Pope, Sidney Villar, Walter Perryman, J. A. W. Dollar, W. S. Mulvey, Henry Gray, W. Hunting, (Hon. Sec.), and W. H. Brown (Hon. Treas.)

It was decided that the vaccine should be obtained from Messrs. C. H. Huish & Co., the agents of the Pasteur Vaccine Co., and also from Dr. Phisalix, Paris. It may be added that this latter gentleman supplied the Committee with first, second, and third vaccine. The last, however, was not used by the Committee. Puppies were advertised for in *The Veterinary Record*; 5s. each was paid; and those received were mongrels. The breeds hereafter mentioned are only approximated, with one or two exceptions.

The puppies all went to the Honorary Secretary's, and he examined each before admission to Irongate Yard.

The First Investigation.

Towards the end of April, 1903, puppies began to arrive at Irongate Yard from Church Street. About a day or two after the arrival of a litter of small black and tans it was noticed by some of the Committee that they were suffering with persistent diarrhœa with much straining.

At a Committtee meeting held at Irongate Wharf on May 13th, Mr. F. Owen Parsons, M.R.C.V.S, was elected as Veterinary-Surgeon-in-Charge to make daily observations and to record them. He took office on May 18th and continued to carry out these duties until Oct. 3rd, 1903.

One or two puppies died prior to May 13th. No post-mortem examinations were made and the symptoms were unrecorded.

On May 13th, it was agreed, on the proposition of Mr. E. Lionel Stroud, that no dog should be vaccinated until the last dog had been in quarantine at least three weeks from the time of arrival of last pup.

On May 13th several puppies presented an unthrifty appearance, but nothing marked was noticed until May 24th when four small puppies in one cage (IV.) appeared depressed, with arched backs; one of these (No. 33) suffered from diarrhœa; this latter had a temperature of 104·4 on May 22nd which dropped to 103·1 on the following day. Another of these had a temperature of 104·8 on the 24th, a third had temperature of 103·8 on 24th, and on the 25th 104·5, and the remaining one a temperature of 103 on May 24th.

No other pup appeared ill until Sunday the 31st of May, when a big strong Airedale puppy (No. 29) in another cage (III.) presented the following symptoms: Temperature 104·2, some congestion of conjunctiva and slight amount of yellow coagulated discharge under one eye; refused food in the morning, refused all biscuit, but took paunch readily in the evening.

On June 1st this animal fed as before, the eye discharge increased in quantity and was of a mucous character. The eyes had a dull appearance and diarrhœa was noticed as affecting this animal for the first time.

Another animal (No. 22) in this cage (III.) had a temperature of 105, but no other marked symptoms of disease were noticed except that the eyes appeared dull, and did not feed quite so well as usual.

A third animal (No. 20) in this cage (III) suffered from a slightly congested conjunctiva and yellow coagulated material was noticed under her eyes.

A fourth (No. 15) had a temperature of 104·6, a very slight mucous discharge from both eyes, and was dull; a fifth (No. 25) appeared dull, and did not feed particularly well in the morning, and refused all food at night.

One of the small puppies in Cage IV (No. 32) developed a small corneal opacity.

Another of these (No. 33), the one suffering from diarrhœa on May 24th, refused all food in the afternoon.

On June 2nd, the small puppies in Cage IV. were not so well: they were depressed and would not take much food. One (No. 32) of these died on the 4th and the other two (Nos. 31 and 33) on the 5th. Pneumonia was discovered to be affecting one of these (No. 32).

On June 4th (the date fixed on May 13th for the first inoculation providing the puppies did not show any evidence of distemper) it was discovered by the Committee that the disease was present; and it was decided to have them all destroyed and a fresh start made after complete cleansing and disinfection of the premises.

The Second Investigation.

By June 25th twenty-three puppies had been collected; each batch as they arrived at Irongate Yard were put into a fresh clean cage by themselves.

A pure bred spaniel (No. 66) arriving on this date had a watery eye discharge and a protruding membrano-nictitans.

On the following day this animal refused food and vomited and had temperature of 104·2, and on the following three days suffered from dysentery.

One of this spaniel's companions (No. 67) had slight watery eye discharge, and another (No. 64) had a few small scales on skin near vulva and small pustules on 30th, and all three suffered from loss of appetite for two days, 26th and 27th of June

Another puppy (No. 59) belonging to another lot had a few small scales on skin round vulva.

The rest appeared healthy on this date (June 25).

On June 30th a large Airedale bitch in Cage II. was found to be affected with a large number of small vesicles inside her left thigh. This animal was isolated at the request of certain members of the Committee meeting on that date. On the following day these vesicles began to subside and a small mucous bead was noticed at the inner canthus of each eye. On the next day, July 2nd, a slight watery discharge flowed from her eyes, and on the 4th a mucous collection was again noticed under her eyes.

This animal appeared to be in such good health that she was soon put back in Cage II with her former companion and nothing abnormal was noticed about her until September 8th, when a slight mucous discharge appeared from left eye. On September 10th she vomited after food, and on the 12th she had dry nose, pallid conjunctiva, and slight mucous eye discharge. On the following day (the 13th) her temperature was 105 and her conjunctivæ were congested and there was one rather large vesicle on red area ¼in. square. On the following days she was dull and sleepy and two more vesicles appeared, and the bare skin of abdomen presented the appearance of a well marked exanthema followed by a further crop of pustules on September 22nd– eight days later. The high temperature was maintained for six days from Sept. 12th to 17th.

She died on September 23rd.

A large piece of meat was found lodged in pharynx.

Post-mortem. No gross lesions discovered.

On July 5th, one puppy (No. 53) suffered from a yellow vesicle on vulva and slight papular eruption around vulva—this latter was also seen on another puppy belonging to the same lot.

On July 8th the puppy mentioned on June 25th as possessing a few scales around vulva (No. 59) had two or three yellow vesicles around vulva.

On July 9th a black collie (No. 72) refused food and presented an anæmic condition, two days later she refused all food offered and was depressed ; she was isolated and spoon-fed, diarrhœa was noticed on the 12th. She died on the night of the 14th.

Post-mortem. No lesions were discovered.

On the same day, July 9th, a small corneal opacity was noticed on a small Irish terrier pup (No. 80) and in the same cage on the 11th a small black pup (No. 83) of same lot had a yellow vesicle near vulva, and refused food. On the following two days appetite slightly improved and diarrhœa set in ; on the evening of the second day, however, he did not feed at all and there was a large vesicle on fore part of abdomen (ventral surface) ; on the 14th great depression and entire loss of appetite ; on the 15th death took place.

Post-mortem. Slight gastritis and enteritis.

The above mentioned Irish terrier pup (No. 80) with the corneal opacity appeared in good general health till the 13th when he did not feed as well as usual ; on the 22nd there was noticed a yellow vesicle inside right thigh, and nothing more was seen till August 31st when a slight mucus eye discharge appeared, this eye discharge persisted for some time. On September 11th there was marked dullness, eyes sunken, and loss of appetite and considerable weakness.

Death took place on the 12th.

Post-mortem. Broncho-pneumonia, enteritis, and ecchymoses.

July 13th was fixed for the first vaccination to take place.

The Committee met and considered it advisable to proceed with the investigation.

From the foregoing, already distemper had broken out in at least *four centres*, two of the animals from two of the centres were dying. Another centre possessed an animal that had suffered from dysentery and a temperature of 104·2 ; and a second animal with skin eruption. The animal indicating the other centre had been isolated for skin eruption and had shown mucous eye discharge in addition on one occasion.

The Centres of Infection Apparent by July 13th, 1903.

The Spaniel Centre, consisting of four puppies (in Cage I. and Cage VIII. in quarantine shed). They arrived on June 25th.

*No. 66** June 25th. Temperature 104 and watery eye discharge.
June 26. Refused food.
27. Dysentery.
July 8. Temperature 104.
Aug. 20-24. Emaciation and temperature of 105-106. depression.
Sept. 23-25. Temperature 104.
29. Coughing, mucus nasal discharge, (unilateral).
30. As before and diarrhœa.
Oct. 2. Right hock joint soft, fluctuating, swelling, considerable lameness.
3. Swelling of yesterday burst. Great depression.
4. Died. P.M. Extensive broncho-pneumonia.

No. 64. June 25. Traces of skin eruption.
June 26. Refused food.
29. Watery eye discharge.
30. Small vesicle.
July 10. Refused food.
22. Two small vesicles.
Aug. 22. Do. do.
24. Uneasiness and convulsions.
25. Refused food, depressed.
26. Died. P.M. Broncho-pneumonia, enteritis and sub-endocardial ecchymoses.

No. 67. June 25-28. Weeping.
June 26. Refused food.
Aug. 9. Vesicles and subsequent dullness, and watery eye discharge.
25. Do.
28-29. Temperature 105·3. Dullness.
30. Died. P.M. Broncho-pneumonia, gastro-enteritis, and ecchymoses.

No. 65. Aug. 20-25. Temperature 104, mucus eye discharge, conjunctivitis.
Sept. 29. Coughing.

Remarks.—Of the animals in this centre two Nos. (64 and 65) were vaccinated on July 20th and August 1st, and Nos. 66 and 67 were not vaccinated.

II. The Second Centre (Cage II).

No. 77. June 30. Pustules inside thigh. Isolated by Committee to Cage VI. from Cage II.
July 1-4. Serous and mucous eye discharge.
July 13. Returned to Cage II. in main building.
Sept. 4-8. Mucous eye discharge and vesicles.
8-12. Vomition (slight), vesicles, mucous eye discharge.
12-17. Temperature ranging from 104·4 to 105·5.
15-18. Exanthema and depression.
22. Pustules.
23. Died. Pulmonary congestion.

III.—The Third Centre (No. 80-84) Cage III.

No. 80. July 9th. Slight corneal opacity.
July 13. Refused food.
22. Vesicles.
Aug. 31. Mucous eye discharge.

* As this investigation officially ended on Oct. 3rd this animal is classified among the "living."

Sept. 4. Watery eye discharge.
7. Conjunctivitis.
10. Mucous eye discharge.
11. Depression rapidly increasing. Loss of appetite, weakness.
12. Died. P.M.—Small areas of broncho-pneumonia, enteritis, and numerous ecchymoses (skin peritoneum, pericardium).

No. 83. July 1. Yellow vesicle near vulva, refused food diarrhœa.
July 13. Another pustle.
14. Considerable depression, refused all food.
15. Died. P.M.—Slight gastritis, and enteritis.

No. 81. July 13. Refused food.
Aug. 20. Slowly progressive emaciation.
Sept. 1. Watery eye discharge, emaciation increased.
7. Diarrhœa, temp. 103·5.
9. Temp. 105.
10. Mucous eye discharge, depresssed.
17. Corneal opacity, depression.
25. Improving in condition.
26. Temp. 104·4.
27. Slight watery eye discharge, no corneal opacity till Oct. 3: slight watery eye discharge and conjunctivitis.

No. 82. July 13. Refused food.
Aug. 1. Watery eye discharge; emaciated.
13. Dull, temp. 104.
20. Slowly progressive emaciation.
Sept. 24. Conjunctivitis, watery eye discharge, slight dullness, and corneal opacity.
25. Vesicles. Subsequently the corneal opacity disappeared (Oct. 1st), and there was considerable improvement in condition.

No. 84. July 13. Refused food.
Aug. 31. Coughing.
Sept. 9. Slight mucous eye discharge.
23-24. Temp. 104, slight mucous eye discharge.

The Fourth Centre, Cage IV.

No. 72. July 9. Did not feed well, anæmic.
July 11. Emaciated, depressed.
12. Diarrhœa, depression increased.
13. Weakness, diarrhœa and depression.
14. Increased weakness and depression.
15. Died. P.M.—No lesions observed.

No. 70. July 19. Slowly progressive emaciation established (remained emaciated till killed in October).
Aug. 31. Depressed. (July-Aug. Emaciated).
Sept. 21, and later. Coagulated serous eye discharge; temp. 104.
Oct. 1. Vesicles.

No. 71. Aug. 17. Vesicles.
Aug. 20. Improving in condition.
Sept. 5. Watery eye discharge.
24. Temp. 106, conjunctivitis, and coagulated eye discharge.
Oct. 2. Nasal discharge.

No. 73. July 11. Depressed, food refused, emaciated.
Aug. 6. Dry nose, dull, eyes half closed.
17, and subsequent few days. Coughing.
22. Dull, improved in condition.
Sept. 8. Coughing again for few days; depressed.
24. Temp. 105.
Oct. 3. More watery eye discharge, nasal serous discharge.

Roughly one-third were vaccinated with first vaccine on July 13; one-third were similary vaccinated on July 20th, the remainder were left as controls, there being controls in each cage, so that vaccinated and control animals were similarly treated in all respects.

The second vaccine was administered about a fortnight after the first in each case.

Broadly, no systemic effect of the vaccine was apparent to the Committee, a more or less slight local effect was apparent; in the majority there appearing generally more swelling resulting from the first than from the second vaccine.

Apart from those mentioned as indications of centres of infection prior to July 13, a number of other puppies from this date onwards showed at times a few small vesicles containing a yellow liquid on the bare skin of the abdomen, frequently there were successive crops of these; they were usually few in number in each case and very superficial.

July 15. A small black and tan dog (*No. 51*) in Cage I appeared dull.
20. A rather large pustule appeared.
30. There was loss of appetite.
Aug. 8, 9 Conjunctivitis and dullness, and temperature 103·2 on the 8th.
10. Temp. of 104·4, and slight running at eyes.
11. Death occurred P.M.—No lesions observed.

July 25, 26, *No. 63*, a dog in Cage III, suffered from conjunctivitis and coagulated serous eye discharge.
Aug. 22-25. Temp. was 104·3.
Sept. 5. Conjunctivitis again appeared with watery eye discharge.
20. Mucous eye discharge.
22. Depression and refusal of food.
24. Diarrhœa and emaciation.
25. Died. P.M.—Broncho-pneumonia and gastro-enteritis.

The only high temperature recorded was on August 22nd and 25th.

By Sept. 15th, 1903, the state of affairs was as follows: Eight had already died, of these four had showed pneumonic lesions.

P.M.—Four had shown abnormally high temperatures.

One animal (No. 54) showed mucous eye discharge, corneal ulcer and diarrhœa.

A number of others suffered from mucous eye discharge, diarrhœa, or wasting.

On this date (Sept. 15) the Committee put the above mentioned No. 54, an inhabitant of Cage 1, into Cage III, as a 'contact' and No. 96, an animal specially infected to use as a 'contact,' into Cage IV.

On the following day No. 94 died and another distempered dog arrived and was put in Cage I. These 'contact' dogs were subsequently moved into fresh cages twice a day, so that each animal came in contact with at least two fresh sources of infection

The Contact Animals.

In August a fresh litter of four collie pups were brought to Irongate Yard. They were not kept in the same building with the others, and on August 22nd one of them (No. 92) went to Mr. Mulvey's to be put with a dog suffering from distemper. This pup returned on August 26th and remained in apparent good health and with normal temperature until August 29th when its temperature was 105, and there was refusal of food and mucous eye discharge.

Meanwhile on August 27th an Irish terrier in an advanced stage of distemper was placed in the cage (No. IV) with the remainder of these pups (Nos. 91, 93, and 94).

The first of these latter to show clinical symptoms was No. 93, which on September 2nd appeared with a mucous eye discharge. The remainder showed first symptome on Sept. 4th.

They all became rapidly worse and went off in condition—No. 92 suffering from diarrhœa and weakness, and dying on September 10th. The others dying respectively on September 12th, 14th, and 16th.

SUMMARY (Second Investigation.)

There was no appreciable difference in the course of the disease between the vaccinated and non-vaccinated.

The deaths curiously enough perfectly illustrate this, there being six deaths among the vaccinated and three among the unvaccinated.*

As the disease generally made more rapid progress after the introduction of the 'contact' animals it is very probable that this rapid progress was due to them.

In numerous instances the period of the disease was very long.

Cases in which dogs suffered from two or three months were common.

The symptoms in the majority of cases were few in number and mild in degree. The symptoms frequently subsided for varying periods, sometimes weeks in length.

The presence of broncho-pneumonia was almost constant in those dying *after* the 25th of August.† No broncho-pneumonia was observed in those dying before this date (four in number).

CONCLUSIONS.

That, the second investigation failed to give the desired indications respecting the value of the vaccine.

Because distemper was so prevalent in each of the four cages that a well marked centre of infection existed in each *before* any vaccination was commenced, as has been already shown earlier in this report.

THE THIRD INVESTIGATION.

As this investigation was carried out without the sanction of the Committee we did not take any part in it; we therefore have to rely solely upon statements made to the Committee on February 10th, June 29th, and October 6th (1904), and from the report already issued.

We understand that four litters were collected at Church Street, Chelsea, and afterwards disposed of thus: One to the Royal Veterinary College, another to Mr. Wm. Sewell's, 57 Elizabeth Street, a third lot was taken to Mr. Wm. Sewell's at the same time that the others were taken thence to the College, a fourth lot was taken to Church Street. Both the latter lots were admitted to have developed distemper.

No *daily* examination of these dogs was made, and we are told it was left to the groom to call attention as soon as he discovered anything amiss.

Of the two lots above mentioned as having been taken to the College consisting of eight pups, four were vaccinated, and in due course a contact dog was placed with them on November 20th for one day, and two Chows suffering from distemper were placed with them on November 25th, 1903.

The dogs (or some of them) were vaccinated before the time of quarantine laid down by the Committee, namely, three weeks, had elapsed.

On December 10th the groom reported one of the pups was ill—this animal had a distemper papule inside his thigh and died December 19th.

On December 19th a second dog appeared ill and a distemper eruption was discovered, this animal died December 21st. ‡ Both of these were vaccinated animals.

A similar eruption was also found in a third, an unvaccinated animal.

December 28. An eruption discovered on two more pups.

One of these died on the 8th January, and the other on January 25th, 1904. On January 26th, 1904, the fifth animal (unvaccinated) was killed, having suffered from chorea.

These pups and one "contact" remained alive. Two of the pups, it is said, having never "shown any *decided* symptoms of illness."

SUMMARY (3rd Investigation).

Of eight pups—
Four died (three vaccinated, one unvaccinated).
Two were killed (unvaccinated).
Two did not show "any decided symptoms of illness" (1 vaccinated, 1 unvaccinated).

CONCLUSION (3rd Investigation).

The fact that the investigators did not notice any illness in two of the pups does not to our minds at all indicate that they escaped the disease, particularly as it is admitted that much was left to the observation of a *groom*, in face of the fact that the manifestations of this disease are frequently not marked and are moreover intermittent (*vide* observations daily recorded in the second investigation).

The fact that we consider the disease overlooked in these two pups leads to the inference that the disease may have been easily overlooked in the others during an earlier stage in the proceedings so that no more value may be placed on the results of this investigation than in the case of the second.

GENERAL CONCLUSIONS ON THE WHOLE SERIES OF INVESTIGATION.

From what we know of the facts of the whole case we conclude that these investigations, although of great interest from a clinical point of view, have not by any means solved the question, viz., to prove or disprove the utility of the vaccine introduced by Dr. Phisalix to prevent distemper.

We also believe that the common source of infection was at Church Street, Chelsea, where the dogs were received before being sent to Irongate Yard, Mr. Wm. Sewell's, 57 Elizabeth Street, S.W., or the Royal Veterinary College.

We consider that the evidence obtained should not be allowed to be buried, but published, and that further investigations should be undertaken for the benefit of the veterinary profession and dog-owning public.

HENRY GRAY.
E. LIONEL STROUD.

December 3rd, 1904.

* Nos. 72 and 83 were ill and were excluded from the investigation before the vaccination commenced on July 13, so are not included in the nine deaths above mentioned.

† August and the early part of September were stormy and almost continually wet.

‡ Note the circumstances. That in one case the disease was only discovered two days before the death of the subject.

THE SUPPLY OF HORSES IN WAR TIME.

Major J. Moore, of the Army Veterinary Department, gave a lecture on Wednesday afternoon, Dec. 7, at the Royal United Service Institution, Whitehall, on "Horses of Different Countries, and Supply with Relation to Military Services." Major-General Plumer, Quartermaster-General, occupied the chair, and among those present were Major-General Benson, C.B., Major-General Mussenden, Col. Thomson, Director-General A.V.D., Lieut.-Col. J. A. Nunn, Col. Rolt, General Prothero, C.B., Lord Raglan, and Col. de Burgh, C.B.

Major MOORE, in the course of his lecture, said that this subject of horse supply had been brought into prominence by our experience in the Boer war. It was important to know where the supplies of horses could be obtained, and to be ready with the animals when any emergency arose. It was estimated that the supply of the world was about 80 millions of horses. In Europe there were 40 millions, in North and South America 25

millions, in Asia 11 millions, in Australasia two millions, and in Africa one million and a quarter. Great attention was paid to breeding by the Government of Russia, with its supply of 23 millions of horses. There were five Imperial and seven military studs, while there was a large number of private studs, particularly in the Don district. It was essentially a country of riding and light draught horses, and while there was a large infusion of English and Arab blood in Russian horses, the breeding of them was subservient to military requirements. Germany had 4,183,000 horses, and it was essentially an importing country. The best material was appropriated for military purposes, and in most German horses there a strain of hackney blood. A large sum was spent annually by the Government in horse-breeding operations, and in Germany all animals were liable to be requisitioned for service in war time. France, with 2,900,000, and Algeria, with 205,000 horses, required all the animals they possessed. Here, too, great attention was devoted to horse breeding, and 22 studs were administered by the Department of Agriculture. A horse census was taken annually in France. In Austria-Hungary there were 4,020,000 horses, 99 per cent. of them being bred by the peasants. While Hungary reared light horses, Austria produced heavy horses, and encouragement was given to local breeds. Large sums were spent annually in breeding operations in both countries. The reason why the Hungarian and Argentine horse in the Boer war was found to be not so serviceable as some other breeds was because it had been reared on grass, and not so much on grain as, for example, the very useful London omnibus horse. Not much had been heard of the Japanese cavalry in the present war, but the horse of Japan was a hardy animal. Great attention was being given to breeding in that country. Studs had been established and prizes were awarded to breeders of good animals. At the present time there was a great exportation of American horses to Canada, while the exportation to the United Kingdom had fallen off. In the British Empire as a whole there were only eight millions of horses. There was a shortage in the colonial supply, and he suggested that encouragement should be given to horse-breeding in the Colonies so that more custom might be given to them instead of our having to go to foreign countries in time of need. He also recommended the encouragement of foreign purchasers in the United Kingdom with the view of keeping up demand and supply. In his judgment also South Africa would in time become a great field for horse-breeding operations, because a good foundation stock had now been laid, though the subsequent breeding operations would need careful supervision. For the home supply of the Army 20,000 horses were registered to meet immediate requirements on mobilization. He suggested some directions in which registration of horses might be modified or made general throughout the country, for the main thing that the military authorities should know was where to get horses when they needed them in an emergency.

Major-General Benson, Director of Transport and Remounts, said that we ought not to draw conclusions from the experience of the Boer war as to the horses in use there. Change of climate and of food, and the rapidity with which the horses were taken into the field, the want of horse-management knowledge on the part of the soldiers, were all factors that made it difficult to form a settled judgment as to the horses used in South Africa. (Hear, hear). In an article in *The Times* on Japanese transport lately he was impressed not so much with what was said about the type of animals used as the way in which the Japanese used them. The Japanese worked the horse only up to half what he could do, with the result that in this campaign the Japanese horse had worked so well, as was generally acknowledged. If we reduced the loads which the Army horse had to carry, more work would be got out of him than was the case at present. (Hear, hear.) He thought that Canada would be a very excellent market for future supply in the case of emergency, and he urged that some practical encouragement should be given to Canada in the way of providing an annual supply of horses.

Colonel P. H. Massy agreed with the view that in purchasing horses abroad the local agents were the best men to employ, and he advocated the buying of horses at an earlier age than was the practice at present. Some steps should also be taken to reduce the weights carried by the cavalry horse.

Mr. W. Staley Spark disagreed with the suggestion that the foreign purchaser should be encouraged to come here, because here, as well as in Canada, he bought the best mares and would not take geldings. This was one of the reasons why the farmers were not breeding so many good horses as in past years. He also paid a tribute to the excellence of the London omnibus horse, and urged that Canada was waiting for some form of practical encouragement from the mother country to breed the type of horse which the Army most needed.

After a few remarks from Lieut.-Colonel Nunn,

The Chairman, in moving a vote of thanks to Major Moore, said he thought that the facts and figures contained in the paper would be of permanent value to the Army. The amount of money spent for horses in foreign countries was instructive as compared with the amount of money voted by Parliament for purchase at home. In war time our Colonies must be our first line of supply, and we must organise our colonial resources so that the Colonies might be able to meet our requirements when the pinch came. The subject of encouraging Canada and the other Colonies was receiving the serious consideration of himself and Major-General Benson, and they were approaching it in the most sympathetic spirit. The difficulties with which they had to contend were the variety of duties in war for which the Army must be prepared. One of the sources of the great wastage in South Africa was the use of horses before they could be acclimatised, and the Remount Department was now studying the question as to the class of horses that could be best acclimatised for service in the different countries and under their varied conditions. South Africa might become one of the finest horse markets in the world, and he knew that the authorities there were seriously considering the subject of breeding for Army purposes.

Major Moore briefly responded and the meeting closed.—*The Times.*

THE SHECHITA QUESTION AT HOME AND ABROAD.—II.

Special investigations by Correspondents of "The Jewish Chronicle."

(Continued from p. 370.)

Brussels.

In Brussels the method of casting employed is somewhat similar to that employed in London, the only difference being that the left fore-leg and the right hind leg attached to chains which draw them together, and the animal falls to the ground. The officials state that no accident has ever occurred. Delegates of the Belgian Royal Society for the Protection of Animals some time ago visited the slaughter-house for the purpose of instituting comparison between the various methods of slaughtering. They found the Jewish method no more inhuman than any other, and stated the fact in their official report. The Jewish method is thus described:—This method (the direct method) is practised exclusively

by the Jewish slaughterers (in the Jewish language *schochet*); it is prescribed by a rite of the Jewish religion, the members of which cannot partake of meat except that of animals slaughtered by the direct method. It consists of bleeding the animal without previously stunning it. Immobility is secured by mechanical means (chains and pulleys): the throat is cut with one incision; the operation is performed with the rapidity of lightning, and a sure blow, and the animal has not time to suffer. The blood flows naturally and in abundance without the aid of artificial means. The Jewish, or direct, method presents moreover this advantage: it is without danger to the operator. In a word, it results from one operation, whereas three distinct and indispensible operations are required in the practice of the indirect method; 1, immobility or preliminary stunning; 2, the actual putting to death or bleeding by the jugular incision: 3, the depletion which consists of making all the blood flow towards the opening in the throat by means of pressure and rythmic ejection.

We have been favoured with the following result of the physiological investigations conducted by Dr. Brunin (Director of Anatomical Section of Brussels University), and Dr. Gaston Daniel, Professor of Physiology.

Two specimens of blood taken in March, 1902. from oxen killed at the Brussels abattoir:

Physical Aspects.

Specimen A: Blood of an ox killed according to the Jewish rite, i.e. (by severance of the carotid arteries.)

Red, vermilion, scarlet, Oxyhæglobin reaction, Plasmin clear, transparent, slightly viscous, almost colourless. Rapid coagulation.

Putrefaction at the end of 2½ days.

Specimen B: Blood of an ox stunned, killed by asphyxia and then bled after the death of the animal.

Dark red, almost black, dichroitic. Reduced hæmoglobin reaction. Plasmin and coagulation as Specimen A.

Putrefaction at the end of 1½ days.

Stunned animals are killed immediately by asphyxia and stoppage of respiration. Circulation being stopped at the same time as the respiration produces an arrest of the bleeding, and prevents the tissues from being emptied. The meat containing blood is much more quickly decomposed and more difficult to digest than that which has been previously denuded of blood. The blood cannot serve as nourishment; it surcharges the digestive tube, and cannot be assimilated to the elements of the body.

It is incontestable that the meat of animals killed by bleeding is more easily digested, more assimilable and better preserved than that of animals killed by asphyxia. From the point of view of the sufferings experienced by the animal in different methods of slaughter it is incontestable that the system which consists of reaching the vital cord by means of a punch is fatal and expeditive, but it diminishes the hygienic value of the meat. The stunned animal suffers much, and if the slaughterer is not most expert one can see the ox making efforts to escape till the third stroke of the hammer. Bleeding by severance of the carotid arteries is less painful. The knife is a special blade, sharp to perfection. From the first flow of blood, cerebral anæmia, which ensues, removes all consciousness and all sensibility. Therefore, one may say that this method of slaughtering unites the maximum of hygienic value with the greatest possible respect to the animal's susceptibility to pain.

HAMBURG.

In Hamburg a similar mode of casting to that already described is adopted. The head of the animal is secured by a rope, and the fore-legs are bound together. To one of the hind legs a stout rope is affixed which is passed between the two fore-legs. The rope has a noose which is fixed to a pulley, and the operation is completed as in the other cases.

PARIS.

In Paris, again, the method is much the same, the two fore-legs being bound by a rope attached to a pulley which brings about the required result.

The Chief Rabbi of France is greatly exercised on the question of Shechita, and has followed affairs in England with great interest. We have been favoured with copies of the following correspondence addressed to him by Dr. Bendersky, of Kieff, who visited the slaughter-house in Paris at M. Zadoc Kahn's request:—

Paris, November 6, 1904.

Monsieur le Grand Rabbin.—I have the honour to reply to your esteemed letter in connection with our conversation of last Sunday. You asked me to describe to you the mode of slaughtering adopted by the slaughterers of Paris. Speaking generally, the Jewish method of slaughtering gives a bad impression when compared with the Christian method (i.e., in good cases where the slaughterer is expert). Our London coreligionists deceive themselves if they think they have anything to learn on this subject from Paris. Here they can merely learn how *not* to slaughter animals. The slaughterers here simply tie the legs and then cut, It does not require very delicate feelings to condemn this shameful system, which often causes disgust. The slaughterers whom I asked why they did not employ the simple methods long known, answered that they lacked legal authorisation, and that the Christian employees would not have anything to do with them, doing the thing their own way.

I am continuing my experiments relative to an anæsthetic for the animals, and we shall speak again of the matter when the time comes.

You told me, in course of our interview, that you had the intention of sending my address to the Board of Shechita, so that they may communicate directly with me. It would be very nice if the interview could be brought about through your intervention, and I should be glad if you will write immediately. If our coreligionists in London want me to conduct experiments with large animals, they must hasten the negotiations before I decide definitely to return to Kieff.

If, as you recently told me, you deem it advisable for me to make a few days journey to London, I would do so on condition that the matter had some solid basis. If I do not succeed in realising my plan, it would, perhaps, be well if the London Board sent a commission of two or three members to the principle abattoirs of Europe and America with a view to finding a remedy for the situation.—Yours, etc.,

Dr. ISRAEL BENDERSKY.

Honoured Grand Rabbin.—In accordance with your request, I place at your disposal copies of the letters of Professor Gréhaut. Our London coreligionists "hasten slowly." They talk a good deal of "expenses," and appointing a Committee. On the other hand it is evident from the report in *The Jewish Chronicle*, which you were good enough to send me, that the danger is rapidly approaching. What does the Committee say? Has it any new facts? The old arguments have been published and are well known, but their power of carrying conviction has sensibly diminished. This is proved by the commission of the scientific section of *Le Temps*. It is necessary to accelerate counter-action, The Admiralty (Mr. Lee) must be told that the London community has put the question on a scientific basis. They might receive an official copy of Professor Gréhaut's letter. I repeat that it is necessary to send two or three persons to the principle towns of the world, and I insist on the necessity of obtaining the opinion of well known physiologists. Such things cannot be done by letter.—Yours, etc.

Dr. BENDERSKY.

Natural History Museum,
Laboratory of General Physiology.
Paris, October 10th, 1904.

I authorised Dr. Bendersky, of Kieff (Russia), to conduct in my laboratory of general physiology of the Museum a series of experiments on animals with a view to produce a complete anæsthetic to be followed by abundant bleeding caused by cutting the throat.

These experiments, made in the case of various animals of small size, perfectly succeeded, and showed that the method employed by Dr. Bendersky could advantageously be employed in the case of large butchers' animals, which could be slaughtered without feeling the least pain. I followed with interest all the experiments of the Russian *savant* with my pupil and assistant, Dr. Nicloux, and I am of opinion that it would be very useful to continue them in order to obtain that application which would give satisfaction to all those desirous of avoiding the suffering of animals.

The process employed does not give any bad taste to the meat, and does not spoil it. This experimental work is a happy practical application of physiology to the initiative of the industrious Doctor Bendersky.

N. Grehaut.

Copy of a Letter to Prof. Kaufmann, of the Veterinary College at Alfort.

Dear Colleague and Friend,—Doctor Bendersky has done good work in my laboratory, but it is desirable that he should experiment on large animals. I should be obliged if you would welcome him in your laboratory and give him facilities for continuing his interesting researches. Dr. Bendersky is learned, intelligent, and full of ardour in experimental work.—Yours, etc.

N. Grehaut.

Dear Grand Rabbin,—I enclose a further sheet to our literature; it is the letter from Prof. Kaufmann. I am surprised not to have heard from London. If they do not deal with the question properly, am I, on that account, to lose my time in such unfavourable circumstances? I go here and there, I work, you write to them, and they tranquilly appoint committees. I could certainly obtain the necessary means for instituting experiments at Alfort from the Society for the Protection of Animals. But I wish to complete the mitzvar I have commenced. And I should like this humanitarian idea to be given to mankind by the Jews, by the *achmanim b'nei rachmanim*. Will you have the kindness to transmit this copy also to London (that it may, perhaps, be shown to Sir Samuel Montagu, the originator of the idea), asking them to reply as quickly as possible, yes or no. Anyway, I am anxious not to leave the matter unsettled. On this decision depend my plans and projects with regard to the continuation of my researches and my return to Keiff.—Yours, etc.

Dr. Bendersky.

Copy of Professor Kaufmann's Reply.

Dear Sir,—I have learnt of the experiments which you have made in the laboratory of Professor Gréhant at the Museum, I find them very interesting and congratulate you on having made a happy application of physiology to practice. I am persuaded that you will obtain good results also on large animals. I shall receive you with pleasure in my laboratory of the Veterinary School, and I shall willingly follow your researches which have a scientific, practical, and humanitarian interest. I have to inform you, however, that the necessary apparatus for these experiments would have to be specially installed which would involve very considerable expense. My annual budget is on the point of being exhausted as we are at the end of the session. I am going to discuss the matter with the director of the school, but I greatly doubt if he will be able at this moment to procure the financial means for your work. Could you not make yourself responsible for at least a part of the expense, which would provide for the purchase of the apparatus and the necessary animals? If we had the necessary financial means, or if you could guarantee the repayment of the sums expended, you could make an immediate start on the work in question. It is worth hastening the matter, for it seems to me a very good thing.—Yours, etc.

Professor Kaufmann.

It will be remembered, in connection with Dr. Bendersky's researches, that Sir Samuel Montagu has offered a prize of £300 for the discovery of a suitable anæsthetic; and the Grand Rabbin of France, and the Russian doctor, whom he has introduced to the authorities in London, will have earned general gratitude if the result of the negotiations referred to in the correspondence printed above is the adoption of a method in which all pain is absolutely eliminated while the prescriptions of the Jewish law are rigidly adhered to. It is well to note, however, the opinion of a London veterinary surgeon, given below, that casting is necessary before the anæsthetic can be applied.

Plague.

The method adopted here is somewhat primitive, pulleys not being used. The fore-feet are tied together. A cord is then attached to the right hind-leg, drawn through between the fore-feet, and wound round the left fore-foot. It is pulled by two employés, a third steadying the fall of the animal by the tail. The authorities are anxious to introduce the system prevailing throughout Germany, which is regarded as best and safest, but they are still without the requisite apparatus, which would involve an expenditure of about £50.

A Trade Opinion.

The editor of *The Meat Trades Journal*, seen by a representative of *The Jewish Chronicle*, said that he was strongly against any legislative action that would interfere with the Jewish method of slaughtering. He was convinced that the Jewish authorities were quite alive to the necessity of employing the most humane methods, and had been striving to perfect their system. If the Shechita Board could get better apparatus they would undoubtedly do so. He was emphatically in favour of Jewish religious scruples being respected. But, apart from that, it was forgotten that the one man most interested in seeing that no harm was done to the animals slaughtered was the butcher, who should, more than anyone else, be credited with a desire to see that the best methods were used. It was undoubted that the Jewish method gave the best results as far as the preservation of the meat was concerned. Jews were by no means the least important traders in meat, and he thought the trade as a whole would side with the Jews if Shechita were threatened. As far as his influence—both personally and in his editorial capacity—was concerned, he would strongly oppose any alteration in the law that would affect the Jewish method of slaughtering. He mentioned, in conclusion, that the whole of the article published in last week's *Jewish Chronicle* was being reprinted in his paper in order that the facts therein contained might be placed on record in a technical journal.

Views of a London Veterinary Surgeon.

Mr. C. T. Bray, Chief of the Veterinary Department of the London General Omnibus Company, stated to a representative of *The Jewish Chronicle* that the method of casting (for surgical purposes) adopted in the case of the Company's horses was very similar to the Jewish method, the animal's legs being joined by hobbles, and then drawn together, the horse being thrown on a straw or peat bed. He thought any pain incurred in this process (which was also used in the case of valuable race-

horses) was justifiable in view of the ultimate end of curing the animal of some defect or disease, for which surgical treatment was necessary. He did not look with favour either on the Jewish method of killing or poll-axing, and advocated a patent killer in which a cartridge placed against the animal's forehead is the means of slaughter. This method was that most generally used for killing horses. He admitted, however, that the hygienic advantages to be gained from emptying as much blood as possible could not be obtained by this method. He quite saw that religious difficulties entered largely into the question. He stated that even if a suitable anæsthetic could be discovered, the animals would have to be cast before it could be applied, as is now the case in surgical operations performed on animals.

Conclusion.

From the foregoing, it will appear that in five European countries where Shechita is practised the method of casting is very similar to that employed here. We believe all of these countries have societies for the prevention of cruelty to animals, and certainly, in some parts of the Continent anti-Semitic feeling is stronger than in this country. There can be no very strong grounds for the condemnation recently expressed, on which we are warned legislative measures will be based, and the fact should always be remembered that the Admiralty Committee grotesquely excluded from consideration the question which method of slaughter produced the better meat. The Board of Shechita, in conjunction with the Board of Deputies, will, no doubt, take all the steps necessary to ensure that no injustice is done, and Jewish interests in connection with Shechita can safely be committed to their charge.—*The Jewish Chronicle.*

HARBEN LECTURES (3rd)—GLANDERS.

Delivered at King's College, Dec. 7th, 1904, by by Professor M'Fadyean, M.R.C.V.S., M.B., C.M. B.Sc., etc.

The third and last of the course of lectures was devoted chiefly to indicating how the disease might be controlled. The lecturer pointed out that the spread of glanders from one stable to another was mostly due to the admission of a horse suff ring from the latent form of disease. These latent cases might have no external sign of infection, but were capable of developing symptoms at any time. They were a great danger, although for an indefinite time they might not be infective. The latent case *may* be no danger for a time, but the majority arrived at a stage in which they were certainly infective.

The existing law had been in force for some years, and the returns of diseased showed conclusively that it was unable to control the disease—that, in fact, unless amended we should continue to suffer loss of horses and endanger human life.

The present regulations provided for the suppression of all clinically diseased horses, but they made no provision for those which were infected. As soon as a diseased horse was removed from a stable and the place disinfected the law required no interference with the other horses in the stable although it was beyond doubt that many of the remaining stud were diseased. The result of this was that disease remained in the stable and might be transmitted by sales or removed to other studs.

The Order now in force is ineffectual because of its permissive nature and because of its neglect to notice the in-contact and probably infected horses that show no outward disease.

The regulations ignore the diagnostic power of mallein, neglect the in-contact horses, and leave the administration of local authorities to act or not as they see fit.

The regulations now in force are not sufficiently definite. A "suspected horse" is one exhibiting symptoms not quite definite. There is no power to enforce the use of mallein which is the only agent a practitioner has to enable him to say whether the "suspicious" symptoms are or are not really those of glanders.

The proceedings under the existing Order leave untouched the in-contact horses, many of which may be diseased, and may be legally sold to spread glanders in healthy studs.

Possibly even worse happens. It is not impossible for an owner to test with mallein an infected stud and sell all the horses which react—a very certain method of spreading the disease.

Amongst veterinary practitioners practical unanimity exists as to what alterations of the regulations now in force are required. The use of mallein should be enforced in all stables where glanders has been detected. The reactors should not be allowed to be sold. They should be treated as a separate class. If possible their slaughter should be enforced, but that of course means increased expense. As a reactor is always dangerous, because liable to develope clinical symptoms, accompanied by the liability to spread infection, it would be best to destroy it. As it may remain a useful and non-infective horse for a long time it cannot be classed with the visibly diseased. If slaughtered compulsorily the owner should be compensated on a higher scale.

Two Departmental Committees have reported to the Board of Agriculture, but their recommendations have not been accepted. The loss of horses from the disease is annually very great, and the loss of human life is probably much greater than appears from the returns of the Registrar-General. Glanders in man is difficult to diagnose, and doubtless many deaths are referred to pyogenic or septicæmic diseases which are really glanders.

To the horse-owner a very great saving would result from the suppression of glanders, and it may safely be asserted that if the equine disease were exterminated no human being would lose his life from this very fatal malady.

Major-General Thomson, of the Army Veterinary Department, who took the chair, moved a vote of thanks to the lecturer, and pointed out that the Army was free from glanders only because it could enforce measures of suppression and prevention which the law did not allow Civil authorities to adopt.

THE COMPULSORY DIPPING OF SHEEP.

Lord Onslow attended a conference of agriculturists at Welshpool recently. Lord Powis presided, supported by Mr. Humphreys-Owen, M.P., and Lieutenant-Colonel Pryce Jones, M.P. On the question of sheep scab, Captain Mytton advocated the compulsory dipping Lord Onslow said that the committee appointed last Session to consider the question had reported, and the Board intended to act upon their report. Universal compulsory dipping would mean the restriction of the movements of sheep, and that could not be satisfactorily done with a sheep population of 25 millions. It was, however, intended to give increased powers to local authorities, though care would be taken to ensure uniformity of regulation. Local authorities would be given the power of segregating and restricting the movements of sheep which might have been in contact with diseased sheep. The owner, however, would have the opportunity of dipping them, and they would then be released. The Board also desired to give local authorities increased powers of insisting upon the dipping of sheep coming from other districts. Mountain districts where scab prevailed would be defined, and owners would have to make a return of sheep on their farms and of the number they purchased, so as to prevent movement, except when

they had been dipped 21 days, and kept apart from the undipped. An exception would be made with sheep sent for slaughter or exhibition. A third order would provide that no sheep should be removed out of the compulsory dipping areas to private premises unless they were kept there 56 days or were dipped. The condition of release would be dipping. By these means he hoped to extirpate sheep scab.

To the Editor of The Times.

Sir,—The fact that a letter has appeared in *The Times* very often gives it a greater weight than the writer's name would otherwise carry. Such is the letter which Mr. J. H. Donald addressed to you last month against the resolution passed unanimously by the Central Chamber of Agriculture in favour of compulsory sheep-dipping for scab.

Mr. Donald asks "how far that body may be considered representative?" The central chamber embraces 77 associated local chambers and farmers' clubs, with a membership of about 20,000. At the meeting which passed this vote in favour of compulsory dipping there were present ten members of the central council and 40 representatives of 35 affiliated chambers of Agriculture from all parts of England, who unanimously supported the resolution. The Scottish Chamber of Agriculture and the National Sheep Breeders' Association have cordially approved the resolution, which was founded upon the report of the strong departmental committee which Mr. Hanbury appointed to consider how best to eradicate sheep scab. After two or three years' carefully conducted experiments with various sheep dips, the committee of the Board of Agriculture reported that "an annual dipping of all sheep within the United Kingdom should be made compulsory upon all flock-owners, this dipping to be carried out under regulations made by the local authority acting under regulations approved by the Board of Agriculture.

When we consider how few counties are subject to this most tiresome disease, and that scab is mainly confined to mountainous regions and hill sheep farms, its eradication should be comparatively easy; for in New Zealand, where 700,000 sheep were infected in 1881, scab was eradicated in 12 years, and, by the same means, Tasmania, whose entire sheep stock was infected in 1869, was freed in 10 years, and both have been free ever since.

Mr. Donald says:—"I very strongly dissent from this decision, and I feel pretty certain that the great majority of sheep-owners will do likewise." I regard this protest as the expiring wail of that body of "passive resisters," who, since the days of the cattle plague in 1865 to the present day have denounced every attempt to get rid of those contagious diseases which have ravaged our herds and flocks. Rinderpest, pleuro, foot-and-mouth disease, sheep-pox, and, last but not least, rabies have all been stamped out, and so would sheep-scab if compulsory dipping was enforced for only two or three years.

Every farmer now annually dips or dresses his sheep, or, if he does not, he certainly ought. Why, then, should he object to use some one of the many reliable dips of which the Board of Agriculture approves? If for no other reasons than the improvement of the wool and the comfort of the sheep—delivering it from the torments of ticks, lice, fleas, and warding off the attacks of the fly and maggots—compulsory dipping would be a real blessing, but when it is also the only means for ridding this country of such a virulent and contagious disorder as sheep scab, I believe that such a measure would be hailed with delight and approval by the whole agricultural community.—Your faithful servant,

CLARE SEWELL READ.

DISEASES OF ANIMALS ACTS 1894 TO 1903. SUMMARY OF RETURNS.

Period.	Anthrax.		Foot-and-Mouth Disease.		Glanders (including Farcy)		Rabies. Cases Confirmed.		Swine Fever.	
	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Dogs.	Other	Out-breaks.	Slaughtered *
GT. BRITAIN. Week ended Dec. 10, 1904	23	26	..	..	26	41	..	..	8	55
Corresponding week in 1903 ..	16	27	..		17	23	..	..	28	142
Corresponding week in 1902 ..	15	16	..	..	17	27	1	1	27	116
Corresponding week in 1901 ..	22	50	..		16	25	..	..	20	133
Total for 50 weeks, 1904	973	1445	..	..	1470	2563	..	..	1161	5457
Corresponding period in 1903 ..	732	1095	..	..	1403	2407	..	..	1433	7744
Corresponding period in 1902 ..	653	1000	1	120	1118	1985	13	12	1633	7896
Corresponding period in 1901 ..	623	919	12	669	1304	2262	1	1	3086	14923
IRELAND. Week ending Dec. 3, 1904	..	..	..	..	..	..	..	..	..	3
Corresponding Week in 1903 ..	..	..	..	..	..	..	..	..	1	122
Corresponding Week in 1902 ..	..	..	..	..	1	2	..	..	3	15
Corresponding Week in 1901 ..	..	..	..	..	..	..	..	..	3	78
Total for 49 Weeks, 1904	4	7	..	..	11	34	..	..	180	4105
Corresponding period in 1903 ..	3	10	..	..	4	5	2	..	167	3995
Corresponding period in 1902 ..	..	..	..	..	10	43	..	..	163	3122
Corresponding period in 1901 ..	2	4	..	..	4	4	1	1	221	3937

Epizootic Lymphangitis, Week ending Aug. 6. 1 case.

Department of Agriculture and Technical Instruction for Ireland, (Castle Street), Dublin, Dec. 8th, 1904.

NOTE.—The figures for the Current Year are approximate only.

* As Diseased or Exposed to Infection.

COMPARATIVE SUMMARY OF RETURNS—
SHEEP SCAB: PARASITIC MANGE, IN IRELAND.

Sheep Scab.	1904	1903	1902	1901
Outbreaks in November	33	99	56	50
„ Eleven Months	424	545	532	457
Parasitic Mange.				
Outbreaks in November	5	5	8	2
„ Eleven Months	153	188	145	180

UNIVERSITY EXTENSION IN LIVERPOOL.

NEW VETERINARY SCHOOL.

The University of Liverpool on Tuesday, 13th inst., added yet another to its many spheres of educational usefulness. In the Arts Theatre, in the presence of an interesting assembly, over which Vice-Chancellor Dale presided, Mr. Walter Long, M.P., President of the Local Government Board, formally declared open the new school of veterinary medicine and surgery, over which Professor Williams has control. Amongst those in attendance at the ceremony were Sir Christopher Nixon, Sir Charles Bruce, Professors Owen Williams, Boyce, Sherrington, Ross, Wilberforce, and Campbell Brown; Messrs. Faulkner (Manchester), H. Sumner, Stafford Jackson, and Eaton Jones, Dr. Caton, Mr. Joseph Hoult, M.P., the Mayor of Birkenhead (Mr. E. W. Crosbie-Oates), and others.

MR. LONG ON THE IMPORTANCE OF VETERINARY STUDY.

Mr. WALTER LONG, who was heartily received, said that before he passed to the task which it was his privilege to be allowed to perform, they would permit him to express his heartfelt thanks to the Vice-Chancellor for the eloquent and sympathetic allusion which he made at the conclusion of his speech to the recurring and most melancholy problem with which we in this country were from time to time confronted. That problem had, as the Vice-Chancellor truly said, thrown upon his shoulders, as the member of the Government at the head of the department specially concerned, a weight of responsibility which called for all the courage the Vice-Chancellor had wished him, and for all the statesmanship it was possible to command, in order to deal with it with any degree of satisfaction for those who were suffering, and without prejudice to those who were divided from the sufferers by a very narrow margin, and who, if the policy attempted were an unwise one, or if the charity which was, happily, always at their command on these occasions, were to be foolishly administered, would very soon be driven into the same abyss into which many of their unfortunate brethren had already fallen. The Government would endeavour, in dealing with this most difficult question, to follow lines which were prudent, wise, and calculated to be successful. (Applause). All present that day who were present when a short time ago they opened the laboratories which were the munificent gift of a great Liverpool citizen must think with pathetic recollection that the voice which was so eloquent on that occasion in support of the work which they had now brought to a successful conclusion was now hushed for ever and would never be heard again in that or any other of the halls he charmed alike by his eloquence and knowledge. (Applause). Professor Nocard advocated the work they were now carrying out. (Applause). He asked them to look at that question from the point of view of the strength of the nation. It was still an unascertained fact how close was the connection between the health of the higher animals and the condition of health of the lower animals who formed their food. In one of those researches now, to the lasting honour of the University and the city, being conducted in Liverpool, it had been alleged that a very dreadful disease could be traced to the condition amongst other things of the animal food which the people ate. Whatever the scientific accuracy of that statement it appealed to commonsense that if the health of the lower animals which formed our food were neglected and treated unscientifically there was great risk both to the lower animals and to the human community. (Applause). He had often wondered at the comparative disregard paid to veterinary science. They had never had till now a great University opening its arms to students who could be taught almost every conceivable subject and at the same time embracing within its walls the training necessary for those who were going to be members of the veterinary profession. (Applause). The value he attached to that great progress was not solely because it was probable the actual form of instruction might be an improvement on anything obtainable elsewhere, but because he believed no man could measure the enormous value to the student of conducting his studies alongside of others working in other branches of learning. That led to a broadening of the mind and an acquisition of general knowledge impossible in a college devoted to one branch of science alone. (Hear, hear.) In this country since 1870 we had believed ourselves great advocates of education, and there were some people who thought we had got a great deal too much education in the elementary schools. On the other hand there were others who thought there could not be too much education in elementary schools, or anywhere else. He thought the truth, as often happened, lay in the mean between these two contentions. Education was, of course, beneficial in every way, but where we had erred hitherto was in not making our education, whether elementary, intermediate, or higher, applicable to the circumstances and needs of the people of our country. (Hear, hear.) Education, rightly and properly bestowed, of a practical character, must be of great benefit to the people, and, recognising that, he believed the great University of Liverpool was on the threshold of a career fraught with immense blessings to the city and the country. In Liverpool they had made up their minds to give to the men who wished to take up this particular branch of science the special training they needed, while affording them also the advantages which only those enjoyed who had obtained a University education. (Hear, hear.) Many of our young Colonials who wanted to be trained in this particular branch of science had found it necessary to go to Universities abroad. There would be no necessity for that in future and they could come to that University to be trained not only in veterinary science, but to receive that wider education which would make them better veterinary officers than they could possibly be without it. (Applause.) Without casting any discredit upon existing officers, or upon their valuable work, he could say there was room for enormous improvement in the class of men available for veterinary posts in connection with various departments. There was no longer any necessity for people to incur the inevitable expense of sending their sons from Lancashire to London to be trained when they could get all they wanted at their very doors in Liverpool University. Liverpool had every reason to be proud of the state to which the University had been brought. In declaring the new school open, and wishing it every possible success, Mr. Long expressed the hope that it would have a brilliant and useful career, and said he was confident that, supported as it was by the University and the city, it would at no distant date make its mark upon the history of the country. (Applause.)—*Liverpool Courier.*

ARMY VETERINARY DEPARTMENT.

Extract from *London Gazette*,
WAR OFFICE, PALL MALL, Dec. 13.

Lieut.-Colonel Fred. Smith, F.R.C.V.S., C.M.G., to be Colonel. Dated 15th November, 1904.

OBITUARY.

LT.-GENERAL SIR FREDERICK W. FITZWYGRAM, BT., F.R.C.V.S., M.P., Leigh Park, Havant, Hampshire.
Graduated 1854. Edin : Dec., 1871.

Lieutenant-General Sir Frederick FitzWygram died at midnight on Saturday, at his residence, Leigh Park, Havant. Sir Frederick Wellington John FitzWygram was born on August 29th, 1823. He succeeded his brother as fourth baronet in 1873, the title having been created in 1805. His father was the second baronet, Sir Robert FitzWygram, and his mother was a daughter of Sir John Haves.

The distinguished general was educated at Eton and Sandhurst, and passed out for the cavalry, and, receiving his commission on July 28, 1843, he joined the 6th Dragoons. With this regiment he served in the Crimea, and was present at the battle of Tchernaya, and the fall of Sevastopol, for which campaign he received a medal with one clasp and also the Turkish decoration. The Inniskillings returned to England at the close of the war, and Sir Frederick, then Captain FitzWygram, had a second tour of duty at home stations. He purchased his majority in the regiment on February 19, 1858, and in August of that year proceeded to India, hoping to cross swords with the mutineers. The regiment, however, arrived too late for this hope to be realised, and it had to settle down to a rather humdrum existence in the Bombay Presidency, where it remained throughout its foreign tour. But its transfer from the home to the Indian establishment gave Major FitzWygram his lieutenant-colonelcy, without purchase, as all British cavalry and infantry regiments in India had at that time two officers of the rank. FitzWygram found himself, therefore, next in seniority to that fine cavalry officer Charles Cameron Shute, who died only a few months ago at a ripe old age, as general and colonel of the Inniskilling Dragoons. There being no prospect of active employment, FitzWygram gladly availed himself of the offer of an exchange to the 15th Hussars, into the command of which he at once fell on his being gazetted on September 18, 1860. This exchange has more than ordinary interest, inasmuch as the officer with whom it was effected was Colonel T. R. Crawley, whose Court-martial—known as the Mhow Court-martial—six years later attracted so much attention. For the next nine years Lieut.-Colonel FitzWygram had to be satisfied with the discharge of the ordinary routine duties of command on home service. He became brevet colonel on July 26th, 1863, and on November 14, 1869, he left Chichester with the regiment for India. There he passed the next five years uneventfully, but with great advantage to the Service, as the reputation of the 15th Hussars showed beyond question. This corps was always one of the most efficient in the Service, and this was very largely due to the great attention which Sir Frederick paid to the condition of the horses, it being the boast of the 15th Hussars that their mounts could remain in the field longer than those of any other regiment.

In 1869 Sir Frederick FitzWygram was promoted major-general, and he became commander of the Cavalry Brigade at Aldershot, where he had a wider field for leadership and for the development of his ideas on veterinary hygiene. During the early eighties he served as Inspector-General of Cavalry on the Headquarters Staff, and introduced many reforms which were of benefit to the Army. He took an active part in the formation of the Veterinary School at Aldershot, where officers and men and farriers were sent for special courses of instruction under able professors. By means of this institution a knowledge of horse treatment was infused into the ranks which was never present before, and the school, which has been continued to the present day, has given considerable aid to the progress of efficiency in the mounted arms. Sir Frederick became lieutenant-general in 1883, and was placed on the Retired List six years later. His work in connection with horse treatment caused him to be elected president of the Royal College of Veterinary Surgeons in 1875, and he held that office until 1877. Sir Frederick also did much to promote the comfort of the soldier, he having identified himself with the movement, then being started, for the creation of those hill depôts which have since proved a veritable blessing to all ranks, and especially to women and children quartered in the plains.

After holding the office of Inspector-General of Cavalry Sir Frederick entered Parliament and sat for 15 years, from 1885 till his retirement in 1900, as Conservative member for the Fareham Division of Hampshire. In the House he was neither a long nor a frequent speaker. Except for an *obiter dictum* that agricultural depression would not be cured by protection, which was "practically dead and gone," his speeches related almost entirely to military affairs, on which so distinguished a soldier was naturally regarded as an authority. He constantly urged the claims of old soldiers to employment. He refused to despair of the Yeomanry, but desired to see the force made thoroughly efficient. And, premising that he himself had left Eton "without the slightest knowledge of any subject which had been of the smallest use to him in after life," he insisted that the education Army officers should proceed on modern and practical lines. In short, on these and kindred topics he spoke with sense and moderation, and showed that old age had not prejudiced him against progress. When his tall and slender figure which, even when he was nearer 80 than 70, was that of a cavalry man, was no longer seen in the House, his military colleagues lost one of the leading members of their group.

Sir Frederick was the author of many works, and his best known publications are "Horses and Stables," "Notes on Shoeing," "Utilization of Cottage Sewage," and "Parochial Life Incumbencies." The first-named work, which first appeared in 1869, has long been regarded as a standard work, as the subject was dealt with so ably. It has gone through several editions, the last of these having appeared a few years ago. Sir Frederick was a justice of the peace and an alderman for Hampshire, and also hon. colonel of the 2nd V.B. Hampshire Regiment. He married in 1882 a daughter of Mr. Thomas Nugent Vaughan and Frances Victountess Forbes, and leaves a son, Mr. Frederick Loftus FitzWygram, who succeeds him in the title, and who was born in 1884, and a daughter.

The funeral took place on Thursday at Redhill Church, which stands at the entrance to Leigh Park.

In consequence of the death of Sir F. FitzWygram a mass meeting in connection with the South Hants Conservative Association, which was to have been held at Portsmouth Town Hall this evening, with the Solicitor-General, Sir E. Carson, M.P., as chief speaker, has been postponed for a month out of respect to the late member for the division.—*The Times.*

COMMUNICATIONS AND PAPERS RECEIVED.—Messrs. H Gray, H. S. Rudduck, Prime & Sons, T. C. Howatson, S. Locke, W. Ascott, H. A. MacCormack, W. Pauer, R. F. Wall, Major J. Moore, A.V.D. Miss N. Newman. "Incorruptible."

The Scottish Farmer, The Morning Post, The Hull News, Nottingham Daily Express, The Evening News (Portsmouth).